

UNIVERSITY
OF MICHIGAN

JUL 7 1951

PERIODICAL
READING ROOM

UNIVERSITY
OF MICHIGAN

JUL 17 1951

PERIODICAL
READING ROOM

Review of Educational Research

VOL XXI, No. 3

JUNE 1951

Desk

THE CURRICULUM: LEARNING AND TEACHING

AMERICAN EDUCATIONAL RESEARCH ASSOCIATION

A Department of the

NATIONAL EDUCATION ASSOCIATION OF THE UNITED STATES

1201 Sixteenth St., N.W., Washington 6, D. C.

AMERICAN EDUCATIONAL RESEARCH ASSOCIATION

THIS ASSOCIATION is composed of persons engaged in technical research in education, including directors of research in school systems, instructors in educational institutions, and research workers connected with private educational agencies.

Officers, February 1951—February 1952

President: PAUL R. MORT, Professor of Education, Teachers College, Columbia University, New York 27, New York.

Vicepresident: ARVIL S. BARR, Professor of Education, University of Wisconsin, Madison, Wisconsin.

Secretary-Treasurer: FRANK W. HUBBARD, Director, Research Division, National Education Association, Washington 6, D. C.

Executive Committee

Consists of five members: The president, vicepresident, secretary-treasurer, chairman of the Editorial Board, and the following immediate past president: ARTHUR E. TRAXLER, Executive Director, Educational Records Bureau, New York 32, New York.

Editorial Board

Chairman and Editor:* FRANCIS G. CORNELL, Professor of Education, University of Illinois, Champaign, Illinois.

ROBERT J. HAVIGHURST, Professor of Education, University of Chicago, Chicago, Illinois.

GORDON N. MACKENZIE, Professor of Education, Teachers College, Columbia University, New York 27, New York.

The president; and the secretary-treasurer.

* **Assistant Editor:** DARRELL J. INABNIT, III, University of Illinois, Urbana, Illinois.

* **Editorial Assistant:** BARBARA K. HAXBY, University of Illinois, Urbana, Illinois.

Applications for membership should be sent to the secretary-treasurer. Upon approval by the Executive Committee persons applying will be invited to become members.

Subscriptions to the REVIEW should be sent to the secretary-treasurer (note address above).

Orders for one or more publications, accompanied by funds in payment, should be sent to the American Educational Research Association, 1201 Sixteenth St., N. W., Washington 6, D. C. For a list of titles see the back inside cover page.

Active members of the Association pay dues of \$7 annually. Associate members pay \$6 annually. Of this amount \$5 is for subscription to the REVIEW. The REVIEW is published in February, April, June, October, and December. Beginning with the February 1949 issue single copies are priced at \$1.50.

Entered as second-class matter April 10, 1931, at the post office at Washington, D. C., under the Act of August 24, 1912.

REVIEW OF EDUCATIONAL RESEARCH

*Official Publication of the American Educational Research Association.
Contents are listed in the Education Index.*

Copyright 1951

By National Education Association of the United States, Washington, D. C.

Vol. XXI, No. 3

June 1951

The Curriculum: Learning and Teaching

Reviews the literature for the three-year period since the issuance of Vol. XVIII, No. 3, June 1948.

TABLE OF CONTENTS

Chapter	Page
Foreword	172
I. Philosophy, Goals, and Social Factors	173
J. MINOR GWYNN, <i>University of North Carolina, Chapel Hill, North Carolina</i>	
II. Growth, Development, Learning, and Maturation as Factors in Curriculum and Teaching	186
WILLIAM C. TROW, <i>University of Michigan, Ann Arbor, Michigan</i>	
III. Design and Pattern of the Curriculum	196
ARTHUR W. GILBERT, <i>Public Schools, Kansas City, Missouri</i>	
IV. Teaching Materials	209
WILLIAM G. BRINK, <i>Northwestern University, Evanston, Illinois</i> JOHN X. JAMRICH, <i>Northwestern University, Evanston, Illinois</i>	
V. Learning Materials	220
HENRY J. OTTO, <i>University of Texas, Austin, Texas</i> DONALD McDONALD, <i>University of Texas, Austin, Texas</i>	

<i>Chapter</i>	<i>Page</i>
VI. Curriculum Development	227
GORDON N. MACKENZIE, <i>Columbia University, New York, New York</i> CLIFFORD BEBELL, <i>Columbia University, New York, New York</i>	
Supplementary Directory	238
Index	243

THIS issue of the REVIEW was prepared by the
Committee on the Curriculum: Learning and Teaching

WILLIAM H. BRISTOW, *Chairman*, Board of Education, New York, New York

WILLIAM G. BRINK, Northwestern University, Evanston, Illinois

ARTHUR W. GILBERT, Public Schools, Kansas City, Missouri

J. MINOR GWYNN, University of North Carolina, Chapel Hill, North Carolina

MANLEY E. IRWIN, Board of Education, Detroit, Michigan

GORDON N. MACKENZIE, Teachers College, Columbia University, New York, New York

HENRY J. OTTO, University of Texas, Austin, Texas

WILLIAM C. TROW, University of Michigan, Ann Arbor, Michigan

with the assistance of

CLIFFORD BEBELL, Columbia University, New York, New York

JOHN X. JAMRICH, Northwestern University, Evanston, Illinois

DONALD McDONALD, University of Texas, Austin, Texas

FOREWORD

THIS issue of the REVIEW was planned and initiated under the leadership of the retiring editorial board. The Association is indebted to Harry A. Greene for his three years of efficient service as editor and chairman of the editorial board, and to Albert N. Hieronymus as assistant editor. In taking up, with this issue, responsibilities for the REVIEW, the new editorial board has had the benefit of the leadership of the retiring editor. Its mission will succeed if the same level of workmanship can be maintained.

The subject of this number, "The Curriculum: Learning and Teaching," has been covered previously in the following issues: Vol. I, No. 1; Vol. IV, No. 2; Vol. VII, No. 2; Vol. XII, No. 3; Vol. XV, No. 3; and Vol. XVIII, No. 3.

The committee, under the chairmanship of William H. Bristow, has operated under considerable difficulties due to illness and other circumstances interfering with its work. This prevented the completion of a chapter, originally planned for the issue, on evaluation and research technics related to the curriculum.

The work on this document was accomplished during a period of great international stress. It was begun just before the outbreak of hostilities in Korea. It may very well be that ensuing circumstances will bring about new phases, new emphases, in researches bearing on the curriculum in later issues on this subject. For the most part, the material covered herein reflects an assumption of pre-Korean, post-World War II stimulation of activity in this field, the beginnings of a development which might or might not continue. The material shows considerable interest in the social aspects of the curriculum with particular emphasis upon "life adjustment education," "citizenship education," and processes of curriculum development—all characteristic of attempts of the profession to "square up" for an era of peaceful living in a democratic society. References include a number of substantial publications which attempt syntheses in the very complex field of the curriculum—another mark of professional reorientation after World War II. As noted in previous treatments of this subject, the emphasis on process, the emphasis on meanings, the emphasis on perspective, has continued a trend away from experimental studies on curriculum and method, tho there is evidence in this issue that the profession is mustering its research competencies to a rigorous evaluation of theory. There is no means of determining whether this is a trend, that is, a development with implications for the future. It is evident, however, that students in the field are attempting to orient their efforts to a society which clearly has a terrific impact on problems of learning and teaching.

FRANCIS G. CORNELL, *Editor*
Review of Educational Research

CHAPTER I

Philosophy, Goals, and Social Factors

J. MINOR GWYNN

MAJOR emphases in research in this area might be classified as of five types: (a) studies of objectives and goals thru the school-child-parent-teacher approach in an individual community; of this sort are the reports by Del Solar (24), Jersild and his associates (45, 46), and by Featherstone (29); (b) studies of the place of moral and religious values in the curriculum (14, 16, 41, 42, 47, 55, 60, 65, 68, 73, 82); (c) research by national groups into the philosophy, objectives, and values of the curriculum; representative of this type are reports from the American Academy of Political and Social Science (3), American Association of School Administrators (4), the Educational Policies Commission (66), Cooperative Study of Secondary-School Standards (20), American Federation of Teachers (51), Stanford Social Education Investigation (76), and the Life Adjustment Education for Youth reports (25, 44, 83); (d) studies of the community—its relationships and joint responsibilities in the formulation of goals and curriculums for the schools (23, 51, 52, 56, 64, 69, 72); and (e) scholarly treatises in book form which have collected, analyzed, and presented a great amount of the research that has been done on aspects of the curriculum in the last quarter of a century; B. Othanel Smith and others (81), and Gwynn (39) try to encompass the whole curriculum field in its various aspects, while Fay Adams (2) and Lee and Lee (53) cover the elementary level, and Featherstone (29) sticks to the secondary-school curriculum.

The effort is made in this chapter to bring together into one place the significant research which pertains to the objectives and goals of the school curriculum and to those factors which influence the curriculum and curriculum change, particularly the community. This objective is unusually difficult, chiefly because of the unusually large number of studies and publications during the last three years. In attempting to do this, care had to be exercised not to duplicate unnecessarily the research which has already been reported in previous issues of the REVIEW (e.g., "The Social Framework of Education," Volume XIX, No. 1, February 1949; "Education for Work, Citizenship, and Leisure," Volume XX, No. 4, October 1950; and "Growth and Development," Volume XX, No. 5, December 1950). Therefore, this section does not cover such important items as studies of social class in child development and the curriculum; major aspects of democratic, intercultural, and international education; economic life as a major factor in the shaping of the curriculum; and certain reports of recent significant social science investigations.

Factors Influencing Curriculum

Prominent now, as in the past, are sociological and social factors in the formulation of the curriculum. These cover a wide range, from the teaching of controversial issues in the classroom (84) to the acquisition of modern education thru current affairs (17). How the teacher can recognize controversial questions and help the student to develop the ability to analyze them formed the basis of Wilhelm's approach (84). He suggested definitely six plans of group approach, involving the development of leadership in this problem area. Clark (17) reported on the best technics in the teaching of current affairs found by three teachers in their visits to a representative cross section of the school systems of the country; these teachers actually observed the teaching of current affairs in the classroom, noted both effective and noneffective methods in use, and talked with various school personnel about the problem. Berninghausen (8) tackled the problem of controversial issues from a different angle when he showed that libraries must buy and circulate all types of books and periodicals if the seeker after knowledge is to have access to alternative viewpoints and the right to learn in an unbiased atmosphere. The Philadelphia Open-Mindedness Study, described by Everett (28), was an attempt to apply the scientific problem-solving method to the combat against prejudice. Teachers in 11 Philadelphia public schools worked together, and with their pupils, to solve real problems in their communities and classrooms.

Gruenberg (38) focused attention historically upon the home and school as sociological partners in the gradual development of sane ways to teach sex education. Continued major emphasis in social education was given to those activities under the control and supervision of the school which help to improve human relations. A good illustration of this point of view, well documented, was presented by Quillen and Hanna (76), based upon the Stanford Social Education Investigation. Human rights and human relations were also the basis for two recent bulletins of the National Council for the Social Studies. Crary and Robinson (21) analyzed the issues, the teaching problems, and the teaching concept in a resource unit in the area of civil liberties and rights. Cummings (23) has gathered together an anthology, primarily based on human relations in the curriculum and in the total school program; both content and method are included.

Evidence of the continued effect of the economic factor on the curriculum was presented by Carmichael (15), who gave data and practical plans for basic business education for all youth in their general education; by Willcockson (62) in the consumer, vocational, and economic experiences suggested for study in the kindergarten and primary grades; by Smith, Stanley, and Shores (81) as one of four major factors in their social diagnosis for curriculum development; and by Gwynn (39) as one of his important factors affecting curriculum development.

The effect of nationally organized groups of various types upon curriculum philosophy continued. The American Academy of Political and Social Science devoted a recent issue (3) to "Critical Issues and Trends"; it covered, with its usual completeness, education in relation to the present world order and the American democratic concept, support and control of schools, social and population change, the program for the various age levels, adult education, and the citizen and his schools. In addition to the Stanford Social Education Investigation (76), professional education groups have produced some significant reports which operate as important factors in curriculum change.

The American Association of School Administrators in its Twenty-Sixth Yearbook (5) collected in one place most of the ideas as to the limits of public education for the masses, from the nursery school thru adult education, including the education of exceptional children and the enrichment of the present curriculum. The Educational Policies Commission (66) presented its carefully worked out, long-range plan for the education of the elementary-school child; the program was based on research, conferences, and visitations to 84 elementary schools in a wide variety of communities and regions. Another strong influence on curriculum philosophy has been the reports and studies on Life Adjustment Education for Youth (25, 44, 83), which will be analyzed under a later section of this chapter.

Values

One way to discover values is to obtain opinions from people in regard to them. Elsie Adams (1) wanted to learn what the pupils in an elementary school expected the school to do for them, what they thought made a good school, and how they would plan a good school for boys and girls. The answers of the students showed clearly that they recognized certain values that some teachers perceived only dimly. Fay Adams (2) found units of work in the various school subject areas to be curriculum values for both the child and the teacher in the broader view of teaching method. Lee and Lee (53) went further: they centered the curriculum for the elementary-school pupil around experiences valuable to the child; prominent among the values centered around experiences in the traditional subjectmatter areas was the development of the more recently recognized ones, such as success, security, recognition, acceptance, status with one's peers, contact with reality, and adventure.

Smith, Stanley, and Shores (81) contend that values are the rules of conduct by which people "... shape their behavior and from which they derive their hopes." They contributed richly to curriculum values by tracing the American value-system, by illustrating the contradictory rules in this value-system, and by showing the social effects of confusions in our value-system and the need for a new kind of subjectmatter. Tho he based his functional curriculum for youth upon analyses of the needs of youth and of society, Featherstone (29) made no distinction between needs and

values; his needs as motives and needs as qualities correspond to what others call values.

The Cooperative Study of Secondary-School Standards has contributed again to research, in its two-year preparation and publication of the 1950 edition of *Evaluative Criteria* (20). The educational needs of the youth in a given school community are the values (standards) which are used by both the self-evaluating and the visiting committees to evaluate the work and program of the school.

Human values in the curriculum have already been noted in the research by Cray and Robinson (21), Cummings (23), Everett (28), Willcockson (62), and Berninghausen (8). The study by the American Council on Education of intergroup relations in teaching materials in textbooks (6) likewise laid emphasis on human relations.

On the high-school level, a good job of research into youth's opinions of the curriculum was done by Grim and Anderson (37). They sampled a total of 271 students in one large high school in each of five states; they compared the opinions of these youth with those of 36 outstanding leaders in the field. The results showed some interesting similarities of opinion, and some significant differences. Oliver's study (70) with a jury of 86 administrators indicated three of five major value areas to receive primary attention in small high schools, namely, the areas of personal problems, larger social relationships, and appreciations and discriminations.

The 1949 Yearbook of the Association for Supervision and Curriculum Development (7) gave major attention to seven aspects of better teaching, most of which are a part of or are closely connected with curriculum values. These are: (a) fostering security and satisfaction, (b) promoting cooperative learning, (c) helping pupils develop self-direction, (d) fostering creativity, (e) helping pupils develop values, (f) providing opportunities for social action, and (g) helping pupils evaluate learnings.

Cremin (22) reported on the meaning and values of the social class system in the United States, as set forth in seven research publications under the general direction of Lloyd Warner and his associates at Chicago. He defined social class, indicated the five class levels that exist and are recognized, and showed that social mobility does take place in the class structure. More attention could have been devoted to the impact of the social class system upon youth, their development, and their curriculum program.

So much was produced during this period on moral, ethical, and religious values that the following section is devoted solely to those aspects.

Religion and Morals

The controversy continued to rage over whether religion has a place in secular education. There are those who take the position that sound modern education and the development of good morals are inseparable. Childs (16) propounded the thesis that America's formation of the patterns for a new civilization is primarily a moral task; for this task, he

emphasized that *method* in education is three-fold—psychological, pedagogical, and moral. A similar point of view was presented by Hay (41), whose data argue for religion, or ethics, as the basis of a broad culture. Hay contended that, in the wider diffusion of education, the emphasis has shifted to the findings and methods of material science at the expense of basic moral aims. He considers character and moral education to be the same. Mason (60) supported the point of view that material science constitutes a sound, secular moral base for public education. His study traced values and public education with the emergence of the secular school in America. He then followed the development of those movements in education identified as essentialism, traditionalism, individualism, and naturalism. He concluded that the scientific, secular base for public education is the main safeguard for American religious and political liberties; and he stressed the development of critical intelligence in youth as the primary task of the schools.

Others take the position that religion should be studied objectively as a part of our culture, that this study should be done under the direction of the public schools, and that the aims would be to make youth literate in regard to religion and thus better able to tackle and solve religious and moral problems. With the help of some 300 educators and religious leaders, Henry (42) made a study of types of curriculum programs and practices in both public and private schools thruout the country. His purpose was to present in book form basic guidance to any community which wanted to try out an objective study of religion in the public schools. Included were information and suggestions on planning, curriculum proposals, matters of policy, selection and training of teaching personnel, community preparation, and improvement with experience. Johnson (47) was in agreement with this position.

The continued separation of church and state is maintained by others, with the conviction that the school should continue to foster ethical, esthetic, and character education with emphasis upon human values. This concept was explored by Thayer (82), Norton (68), and the Twenty-Sixth Yearbook (65) of the NEA Department of Elementary School Principals on spiritual values in the elementary school.

The history of the constitutional and statutory provisions concerning religion and education were presented ably by Butts (14) and O'Neill (73); the latter felt that the matter was primarily one of civil liberties. Gwynn (39) analyzed the issues involved in the problems of religion in education, of character education, and of intergroup and human interaction. Students of character education should read carefully Ligon's description (55) of the results of 10 years of study in the Union College Character Research Project.

The Community

Many studies and reports during the last three years have focused attention upon the community as a major factor in the development of cur-

riculum goals and philosophy. Bolzau and Stevenson (10) reported the cooperative experiment in Girls High School of South Philadelphia in which two social studies teachers, the school administration, and various agencies and businesses worked out a plan for school credit based on actual work experience of some 30 to 45 hours a semester. Nelson's study (67) of 300 high schools in every state and Alaska indicated that only one of every 50 students in high school was obtaining any experience in community service; field work of this type was considered desirable, and school credit should be granted for it.

Experiments and studies in cooperative curriculum planning were reported by Fox (31) in Chautauqua County (N.Y.) with emphasis upon cooperative social planning for a functional curriculum based upon research into the life of the local community; by Ernest Osborne (74), who insisted upon careful preplanning for family life education by parents, children, and community leaders with the school; by Gans (34), who studied the plan of groups of parents and lay people, teachers, and administrators working as teams to develop programs in elementary education; by Mackenzie (59), who reviewed assumptions and goals in community cooperation in curriculum planning and indicated some areas in which the community educates automatically and others in which it educates effectively only with the aid of the school or of other agencies; by Krug (52), who indicated that the main problem in curriculum planning is how we can get educational leaders, teachers, lay people, children and youth to work together in determining the purposes of education and in the improvement of educational procedures and materials; and by the Metropolitan School Study Council (61) and the NEA Department of Elementary School Principals in its Twenty-Eighth Yearbook (64), which stressed the leadership of the administrator in getting teachers, parents, pupils, community agencies and the general public together in cooperative curriculum planning.

Continuing a well-defined trend of the last 20 years, other studies showed the value of the school as the center of the community and of all types of community living. Mainly of this type were the reports of Garstin (35), Lund (57), Clark (18), Dresden (27), and the National Association of Secondary-School Principals (50) in a part of their report on how to develop public relations thru school and community agencies.

Valuable research was reported on the training of community leaders and on the development of individual and group skills in group discussion. Lippitt (56) set forth the use of research technics of social science in the task of training community leaders to deal effectively with the problems of intergroup relations. Cooperating in this experiment were Michigan University's Research Center for Group Dynamics, the Commission on Community Interrelations of the American Jewish Congress, and the Connecticut Interracial Commission. The American Association of School Administrators (4) analyzed the types and workings of cooperative community leadership. The Metropolitan School Study Council (61) also

studied educational dynamics as a part of their cooperative research.

Fontaine (30) reported on the experiment in Great Neck, Long Island, where community experts who were natural teachers were brought into school classes and other community experts were persuaded to serve on special committees which were concerned with long-range school planning.

Not to be overlooked are those valuable compilations of experiences which illustrate the community approach in curriculum work. Jean and Jesse Ogden (69) continued their work in Virginia and reported on their five-year experiment in community development, including later evaluations of earlier experiments. Edward Olsen compiled another case book (72) of school and community programs, samples ranging from the kindergarten to adult education. Lloyd and Elaine Cook (19) published their sociological approach to education, a case book with emphasis upon the group-work method and approach and the development of teacher-leader skills in specific situations. The community approach to the curriculum was emphasized in the Educational Policies Commission's curriculum blueprint for the elementary school (66), by Gwynn (39), by Smith, Stanley, and Shores (81), by Krug (52), and by the Association of Secondary-School Principals in its report (32) on programs for improved living in secondary schools as developed with the stimulation of the Sloan Experiments in Applied Economics. Both Childs (16) and Hay (41) contend that the local schoolboard, in the individual community, can practically control what is taught in the schools, and that actual experiences in living together are necessary for the youth to acquire the common way of living in America's complex society today.

Objectives and Goals

Goals are hard to distinguish from values. Some writers really make no distinction between them. Curriculum goals may be derived from various sources—from the opinions of pupils, from the philosophy and opinions of adults, and from experimental data.

Friedman (33) conducted a study in a senior civics class which asked both pupils and parents what should be taught. One interesting result was that parents rather than pupils thought that topics of a general nature would be of more value to the pupils; both thought that pupils should learn what would help them in life. Oliver (70, 71) made a nationwide study of curriculum needs, basic goals, and practices of small high schools with enrollments of less than 200. He listed the 12 most important objectives in high-school curriculums as rated by a "field jury" of 86 principals and superintendents and, contrasted with these 12, the 12 practices found most commonly in high schools. The difference in theory and practice is interesting; he concludes that many small high schools are tied down by the traditional approach to secondary education and that these small high schools should give more time to analysis of the problems of youth and life adjustment education. Goals are also derived from the philosophy,

thought, and opinions of individual adults and groups of people. The American Academy of Political and Social Science (3) gave large space to the goals of education in the present world order and the crisis in the United States today. The Twenty-Sixth Yearbook of the American Association of School Administrators (5) explored the possible limit of the goals of public education for the masses. The National Council of Independent Schools (63) felt that it was imperative to go on record concerning the values for which it stands and concerning the function of all secondary education in the United States. The American Federation of Teachers (51) issued a report on goals for American education. Among their seven goals, they listed two which are not included in the 10 imperative needs of youth or in the seven cardinal principles; these are the duty of the school to close the gap between scientific advance and social retardation and the goal of the school to expand interest in international cooperation and peace. However, most of the rest of the report made a good case for goals for American teachers, rather than for goals for American education. Leipold (54) obtained 500 parents' views on school practices and goals in Nokomis Junior High School at Minneapolis. Results showed that parents wanted the schools to keep abreast of the times, but did not want a too rapid, unexplained change.

General education as a curriculum objective came in for its share of investigation. Carmichael (15) examined it from the standpoint of including business education for all youth. The Educational Policies Commission's recommendations (66) for the educational program for the elementary school projected the elementary school of the future from 1948 to 1958; it laid emphasis upon the school as a place for excellent living. The newer movement for Education for Life Adjustment received ample attention in the scheme of general education. Hull (44) and the U. S. Office of Education publication (83) described both the history of the movement started by the Prosser Resolution and the goals of life adjustment education for the neglected 60 percent. Gaumnitz (36) presented some administrative blocks to the life adjustment movement. Douglass and his collaborators (25) claim that life adjustment education can be implemented within the present framework of the secondary school and within the present curriculum program and subjectmatter areas; they also set forth the philosophy and objectives of this program in theory and in practice. The volume marks the beginning of study and research in this area, in spite of the fact that only two of the authors are public school men. Jones (48) emphasized the common learnings program in his high school of the future.

The struggle of the 1920's and '30's between the "progressives" and the essentialists was thrown into clearer perspective by Brickman (12), who analyzed the 1938-1948 decade of essentialism; by Redefer (77), who gave credit to progressive education for improved methods of teaching to attain the goals of the curriculum, centered primarily around the development of the whole child in a desirable and natural learning situation; and by Bode

(9), who covered again the scientific method versus theology in teaching and aims. Experience as subjectmatter, or as an aim in education, was analyzed by Shane (80); certain criteria were developed which could prove useful to a teacher in planning a course on the experience pattern. Attention has already been called to Child's work (16) on morals as curriculum goals.

Curriculum objectives were analyzed in different sections of their books by Smith, Stanley, and Shores (81), by Lee and Lee (53), by Fay Adams (2), by Krug (52), and by Gwynn (39).

Objectives derived from experimental data included several outstanding contributions. Havighurst (40) reported the findings of the University of Chicago's Committee on Human Development. In effect, he defined the goals of education as helping individuals to achieve certain developmental tasks at six periods in the life span. The influence of this Chicago report was also evident in Brooks' report of the attempt to integrate books and reading with developmental tasks thru a highly selective list of titles. The National Association of Secondary-School Principals (32) described experiments in providing programs for improved living.

Three recent cooperative studies of the Horace Mann-Lincoln Institute of School Experimentation (43) added valuable data to the determination of goals thru the study of children's interests and the dependence of these interests upon the particular experiences that children have had. Jersild and associates (45) studied the joys and problems of child rearing, and presented their findings of the satisfaction of adults from bearing and rearing children; their problems with their children, and their hopes for them. Jersild and Tasch (46) reported on the Springfield Cooperative Study of Children's interests, using the Interest Finder which had simple questions centered around children's wishes, likes, and dislikes; Grades I-XII were involved. Del Solar (24) made a comparative study of parents' and teachers' appraisals of children; perhaps one of the most significant indications of this study was that the roles of the home and school overlap to such an extent that the school cannot minister to all aspects of the training and welfare of the "whole" child.

In an earlier section in this chapter, space was devoted to the studies of various people and groups on "values," some of which included goals. Of this type were those of Elsie Adams (1), Grim and Anderson (37), Featherstone (29), and the Cooperative Study of Secondary-School Standards (20).

Curriculum Complex

Research in this area involved some items difficult to classify. Two studies of legal control of education involved the curriculum. Keesecker (49) analyzed the laws of the various states pertaining to required instruction in the curriculum and matters concerning American freedom. Remmlein (78) included in her school-law text a study of statutory pro-

visions and court interpretations of state courses of study, or board of education curriculum regulations, as well as the legal aspects of textbook adoption, purchase, and content or bias. Wright and Barker (86) studied zones of influence on the behavior of children in a community. Both Draper (26) and McNally (58) developed the thesis that research and experimentation are the responsibility of each teacher and each school. The successful development of programs of family life education in Illinois was traced by Ruth Osborne and Kirkendall (75). A provocative report was made by Robinson (79) on student participation in school administration and activities in an industrial school for boys who were all behavior problems. The Committee on the Study of Teaching Materials in Intergroup Relations of the American Council on Education completed its impartial survey and evaluation (6) of 315 textbooks prepared especially for instructional use. Brickman (11) made his usual valuable contribution in reviewing 21 recent publications pertaining to educational sociology. The increasing importance of the role of reading in regard to youth development and school progress was demonstrated by Witty (85) in the National Society for the Study of Education's Forty-Seventh Yearbook.

Bibliography

1. ADAMS, ELSIE W. "Children State Their Educational Philosophy." *Educational Leadership* 6: 240-42; January 1949.
2. ADAMS, FAY. *Educating America's Children*. New York: The Ronald Press Co., 1946. 490 p.
3. AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE. "Critical Issues and Trends in American Education." *The Annals of the American Academy of Political and Social Science* 265: 1-172; September 1949.
4. AMERICAN ASSOCIATION OF SCHOOL ADMINISTRATORS. *Community Leadership*. Washington, D. C.: the Association, a department of the National Education Association, 1950. 24 p.
5. AMERICAN ASSOCIATION OF SCHOOL ADMINISTRATORS. *The Expanding Role of Education*. Twenty-Sixth Yearbook. Washington, D. C.: The Association, a department of the National Education Association, 1948. 484 p.
6. AMERICAN COUNCIL ON EDUCATION. *Intergroup Relations in Teaching Materials: A Survey and Appraisal*. Washington, D. C.: American Council on Education, Intergroup Education Project, 1949. 231 p.
7. ASSOCIATION FOR SUPERVISION AND CURRICULUM DEVELOPMENT. *Toward Better Teaching*. 1949 Yearbook. Washington, D. C.: the Association, a department of the National Education Association, 1949. 282 p.
8. BERNINGHAUSEN, DAVID K. "On Keeping Our Reading Free." *Educational Leadership* 6: 104-108; November 1948.
9. BODE, BOYD H. "Pragmatism in Education." *New Republic* 121: 15-18; October 17, 1949.
10. BOLZAU, EMMA L., and STEVENSON, EMILY D. "Volunteer Student Social Service Project." *Social Education* 13: 237-38; May 1949.
11. BRICKMAN, WILLIAM W. "Educational Sociology." *School and Society* 68: 74-79; July 31, 1948.
12. BRICKMAN, WILLIAM W. "Essentialism Ten Years After." *School and Society* 67: 361-65; May 15, 1948.
13. BROOKS, ALICE R. "Integrating Books and Reading with Adolescent Tasks." *The School Review* 58: 211-19; April 1950.
14. BUTTS, ROBERT FREEMAN. *The American Tradition in Religion and Education*. Boston: Beacon Press, 1950. 230 p.

15. CARMICHAEL, VERNAL H. "Business Education for All American Youth." *NEA Journal* 38: 588-89; November 1949.
16. CHILDS, JOHN L. *Education and Morals*. New York: Appleton-Century-Crofts, 1950. 299 p.
17. CLARK, DELBERT, editor. *Current Affairs and Modern Education: A Survey of the Nation's Schools*. New York: The New York Times Co., 1950. 278 p.
18. CLARK, LOIS "A Central School Serves Its Community." *NEA Journal* 37: 276-77; May 1948.
19. COOK, LLOYD A., and COOK, ELAINE F. *A Sociological Approach to Education: A Revision of Community Backgrounds of Education*. Second edition. New York: McGraw-Hill Book Co., 1950. 514 p.
20. COOPERATIVE STUDY OF SECONDARY-SCHOOL STANDARDS. Evaluative Criteria. 1950 edition. Washington, D. C.: Cooperative Study of Secondary-School Standards (744 Jackson Place), 1950. 305 p.
21. CRARY, RYLAND W., and ROBINSON, JOHN T. *America's Stake in Human Rights*. Bulletin No. 24. Washington, D. C.: National Council for the Social Studies, a department of the National Education Association, 1949. 51 p.
22. CREMIN, LAWRENCE A. "Some Are More Equal than Others." *Progressive Education* 27: 97-100; February 1950.
23. CUMMINGS, HOWARD H., editor. *Improving Human Relations*. Bulletin No. 25. Washington, D. C.: National Council for the Social Studies, a department of the National Education Association, 1949. 158 p.
24. DEL SOLAR, CHARLOTTE. *Parents and Teachers View the Child*. New York: Teachers College, Columbia University, 1949. 119 p.
25. DOUGLASS, HARL R., Editor. *Education for Life Adjustment*. New York: The Ronald Press Co., 1950. 491 p.
26. DRAPER, EDGAR M. "Curriculum Research: Biggest Responsibility of Every Teacher." *The Clearing House* 24: 387-92; March 1950.
27. DRESDEN, KATHERINE W., and STEGEMAN, WILLIAM H. "When School and Community Get Together." *The Clearing House* 25: 22-25; September 1950.
28. EVERETT, SAMUEL. "Teachers Combat Prejudice." *NEA Journal* 37: 216-17; April 1948.
29. FEATHERSTONE, WILLIAM B. *A Functional Curriculum for Youth*. New York: American Book Co., 1950. 276 p.
30. FONTAINE, ANDRE. "Everybody's School." *National Parent-Teacher* 44: 10-13; September 1949.
31. FOX, LORENE K. *The Rural Community and Its School*. New York: King's Crown Press, 1948. 233 p.
32. FRENCH, WILL, editor. *Secondary School Programs for Improved Living*. Bulletin No. 155. Washington, D. C.: National Association of Secondary-School Principals, a department of the National Education Association, May 1948. 188 p.
33. FRIEDMAN, KOPPLE C. "Utilizing the Community in Curriculum Development." *School Review* 56: 357-60; June 1948.
34. GANS, ROMA. "How To Improve Community Relations in Elementary Curriculum Planning." *Progressive Education* 27: 140-43; March 1950.
35. GARSTIN, L. H. "The School as an Integrating Agency in Community Life." *Journal of Educational Sociology* 21: 409-16; March 1948.
36. GAUMNITZ, WALTER H. "'Road Blocks' to Life Adjustment Education." *School Life* 32: 19-20, 22; November 1949.
37. GRIM, PAUL, and ANDERSON, VERNON. "Is the American High School Serving Today's Youth?" *Educational Leadership* 6: 338-49; March 1949.
38. GRUENBERG, SIDONIE M. "Sex Education Today." *Child Study* 26: 99-100, 116; Fall 1949.
39. GWYNN, JOHN MINOR. *Curriculum Principles and Social Trends*. Revised edition. New York: Macmillan Co., 1950. 768 p.
40. HAVIGHURST, ROBERT J. *Developmental Tasks and Education*. Chicago: University of Chicago Press, 1948. 86 p.
41. HAY, CLYDE LEMONT. *The Blind Spot in American Public Education*. New York: Macmillan Co., 1950. 110 p.
42. HENRY, VIRGIL. *The Place of Religion in Public Schools: A Handbook To Guide Communities*. New York: Harper and Brothers, 1950. 164 p.
43. HORACE MANN-LINCOLN INSTITUTE OF SCHOOL EXPERIMENTATION. "A Progress Report." *Teachers College Record* 49: 305-62; February 1948.

44. HULL, JOHN DAN. *A Primer of Life Adjustment Education*. Chicago: American Technological Society, 1949. 30 p.
45. JERSILD, ARTHUR T., and OTHERS. *Joys and Problems of Child Rearing*. New York: Teachers College, Columbia University, 1949. 235 p.
46. JERSILD, ARTHUR T., and TASCH, RUTH J. *Children's Interests and What They Suggest for Education*. New York: Teachers College, Columbia University, 1949. 173 p.
47. JOHNSON, FREDERICK ERNEST. "The Role of Religion in General Education." *Teachers College Record* 51: 222-32; January 1950.
48. JONES, GALEN. "The High School of the Future." *Teachers College Record* 50: 451-56; April 1949.
49. KEESECKER, WARD W. *Education for Freedom as Provided by State Laws*. U. S. Office of Education, Federal Security Agency, Bulletin 1948, No. 11. Washington, D. C.: Superintendent of Documents, Government Printing Office, 1948. 38 p.
50. KINDRED, LESLIE W., editor. *Public Relations in Secondary Schools*. Bulletin No. 152. Washington, D. C.: National Association of Secondary-School Principals, a department of the National Education Association, 1948. Part IV, "School and Community Agencies," p. 202-66.
51. KIRKENDALL, LESTER A.; KUENZLI, IRVIN R.; and REEVES, FLOYD W. *Goals for American Education*. Chicago: American Federation of Teachers, 1948. 130 p.
52. KRUG, EDWARD A. *Curriculum Planning*. New York: Harper and Brothers, 1950. 306 p.
53. LEE, JONATHAN MURRAY, and LEE, DORRIS MAY. *The Child and His Curriculum*. Second edition. New York: Appleton-Century-Crofts, 1950. 710 p.
54. LEIPOLD, L. E. "500 Parents' Views on School Practices." *The Clearing House* 25: 19-21; September 1950.
55. LIGON, ERNEST M. *A Greater Generation*. New York: Macmillan Co., 1948. 157 p.
56. LIPPITT, RONALD. *Training in Community Relations*. New York: Harper and Brothers, 1949. 286 p.
57. LUND, SVEN E. TORSTEN. *The School-Centered Community*. New York: Anti-Defamation League of B'nai B'rith, 1949. 42 p.
58. McNALLY, HAROLD J. "Experimentation in Elementary Schools: Hothouse Plant or Hardy Perennial?" *Teachers College Record* 51: 520-27; May 1950.
59. MACKENZIE, GORDON N. "Community Cooperation in Curriculum Planning." *Teachers College Record* 51: 347-52; March 1950.
60. MASON, ROBERT E. *Moral Values and Secular Education*. New York: Columbia University Press, 1950. 155 p.
61. METROPOLITAN SCHOOL STUDY COUNCIL. "A Progress Report." *Teachers College Record* 50: 1-59; October 1948.
62. NATIONAL COUNCIL FOR THE SOCIAL STUDIES. *Social Education for Young Children*. Curriculum Series: No. 4, revised edition. Washington, D. C.: the Council, a department of the National Education Association, 1950. 120 p.
63. NATIONAL COUNCIL OF INDEPENDENT SCHOOLS. "The Functions of Secondary Education in the United States." *School and Society* 72: 193-95; September 23, 1950.
64. NATIONAL EDUCATION ASSOCIATION, DEPARTMENT OF ELEMENTARY SCHOOL PRINCIPALS. *The Public and the Elementary School*. Twenty-Eighth Yearbook. Washington, D. C.: the Department, 1949. 347 p.
65. NATIONAL EDUCATION ASSOCIATION, DEPARTMENT OF ELEMENTARY SCHOOL PRINCIPALS. *Spiritual Values in the Elementary School*. Twenty-Sixth Yearbook. Washington, D. C.: the Department, 1947. 351 p.
66. NATIONAL EDUCATION ASSOCIATION AND AMERICAN ASSOCIATION OF SCHOOL ADMINISTRATORS, EDUCATIONAL POLICIES COMMISSION. *Education for All American Children*. Washington, D. C.: the Commission, 1948. 292 p.
67. NELSON, RAYMOND. "Citizenship Laboratory." *School Review* 56: 156-62; March 1948.
68. NORTON, JOHN K. "Church, State, and Education." *NEA Journal* 38: 21-24; January 1949.
69. OGDEN, JEAN, and OGDEN, JESSE. *These Things We Tried: A Five-Year Experiment in Community Development*. University of Virginia Extension Bulletin XXV, No. 6, October 15, 1947. Charlottesville: University of Virginia, 1948. 432 p.

70. OLIVER, ALBERT I. "Basic Goals for a Small High School: Theory and Practice." *The School Review* 58: 458-67; November 1950.
71. OLIVER, ALBERT I. "The Objectives of a Small High School's Philosophy." *The School Review* 58: 139-46; March 1950.
72. OLSEN, EDWARD G., editor. *School and Community Programs*. New York: Prentice-Hall, 1949. 510 p.
73. O'NEILL, JAMES M. *Religion and Education Under the Constitution*. New York: Harper and Brothers, 1949. 338 p.
74. OSBORNE, ERNEST. "Guideposts for Family-Life Education." *NEA Journal* 39: 124-25; February 1950.
75. OSBORNE, RUTH FARNHAM, and KIRKENDALL, LESTER A. "Family-Life Education in Illinois High Schools." *The School Review* 58: 516-26; December 1950.
76. QUILLEN, ISAAC JAMES, and HANNA, LAVONE A. *Education for Social Competence*. Chicago: Scott, Foresman and Co., 1948. 572 p.
77. REDEFER, FREDERICK L. "What Has Happened to Progressive Education?" *School and Society* 67: 345-49; May 8, 1948.
78. REMMLEIN, MADALINE KINTER. *School Law*. New York: McGraw-Hill Book Co., 1950. 376 p.
79. ROBINSON, JOHN T. "Students and Faculty Work To Improve Life in School." *The Journal of Educational Sociology* 21: 517-27; May 1948.
80. SHANE, HAROLD G. "Experience as Subject Matter." *Progressive Education* 26: 126-49; March 1949.
81. SMITH, B. OTHANEL; STANLEY, WILLIAM O.; and SHORES, J. HARLAN. *Fundamentals of Curriculum Development*. Yonkers: World Book Co., 1950. 780 p.
82. THAYER, V. T. *Religion in Public Education*. New York: The Viking Press, 1947. 212 p.
83. U. S. OFFICE OF EDUCATION, FEDERAL SECURITY AGENCY. *Life Adjustment Education for Every Youth*. Washington, D. C.: the Office, Division of Secondary Education, 1948. 122 p.
84. WILHELMS, FRED T. "Letter to a Teacher: On Controversial Questions." *Progressive Education* 26: 8-12; October 1948.
85. WITTY, P. A. "Current Role and Effectiveness of Reading Among Youth." *Reading in the High School and College*. Forty-Seventh Yearbook, Part II, National Society for the Study of Education. Chicago: University of Chicago Press, 1948. p. 8-26.
86. WRIGHT, HERBERT F., and BARKER, ROGER, G. "The Elementary School Does Not Stand Alone." *Progressive Education* 27: 133-137; March 1950.

CHAPTER II

Growth, Development, Learning, and Maturation as Factors in Curriculum and Teaching

WILLIAM C. TROW

IN bringing together the diverse aspects of educational psychology indicated by the title of this chapter, and in focusing them on instructional practice, it would seem appropriate first to look for the hypotheses that lie behind both research and practice. The ideas embodied in these hypotheses can then be noted in the implications of the research that has been done. The treatment of this chapter will therefore concentrate on learning and the curriculum since growth and development are reviewed in a separate issue of this journal.

Hypotheses for Research and for School Practice Affecting Teaching and the Curriculum

The basic idea that underlies all the others in modern education is to be found in John Dewey's recurrent emphasis on the experience of the child as of central concern. Regard for his all-round development has shifted the emphasis from forcing him to acquire knowledge, to making provision for an inner living motivation (22). We cannot know what to teach, how to teach, or when to teach until we know whom we are teaching, and from what homes, groups, and cultures our students come, and until we can identify and project their current needs against the future needs of a dynamic society (55). If these things are to be done, man in general, and the pupil in particular, must be viewed not as a free soul, a capricious creature, but as a dynamic, lawful system interacting with the energy systems of the environment. Anderson (3) contrasted the effects on one's view of pupil capacity, motivation, practice, and transfer when man is viewed (a) as a "free soul" and (b) as a "dynamic lawful system." American psychology supports the latter under which there have been identified two basic systems of behavior and of learning, the association system and the field system.

If man is viewed as a dynamic lawful system, it means, first, that the individuals in a learning group must be perceived as a group of dynamically interactive personalities (27). Included in this perception will be what Snygg and Combs (69) called the "phenomenological" approach, which seeks to explain behavior on the basis of the behavior's perception of himself and of the world, and deal with it accordingly.

It means, second, that the objectives of education will include the development of attitudes toward other individuals and groups (50), but they

must be "right" attitudes. Research is therefore needed on value concepts and their role and influence in social behavior (87). Modern education is actually reoriented toward human values (14), yet probably few teachers realize they are applying axiology when they try to answer a child's, "Why do we have to?" If axiology is viewed as the science of preferential behavior (53), the way is open for the coalescence of value concepts with those derived from the study of personality and referred to as needs.

The third implication of the view of man as a dynamic lawful system, then, is that the educator, in working out a curriculum to promote pupil learning, will be a student of the dynamics of normal personality. As expounded by Dollard and Miller (29) and others, knowledge of personality is derived from psychoanalysis, social psychology, and anthropology, from which areas light is being thrown on the nature of social motivation and drive, of fear and conflict, and on the cultural conditions of learning. Harsh and Shrickel (41) traced successive developmental stages which produce changes in motivation, ability, and learned adjustment patterns and which must be more adequately reflected in the school program. For example, Miller (56) found that rats learned to get relief from an electric shock by striking each other, and when alone they struck a celluloid doll. The rats, like the child in play who beats the "mamma doll," revealed the Freudian mechanism of displayed aggression, as would the child restricted by too narrow curriculum demands.

Gluckhohn and Murray (51) in one of the chapters in *Personality: In Nature, Society and Culture*, to which a number of authors have contributed, outlined their dynamic, organismic concept of personality. They see it as a continuity of functional forces and forms manifested thru sequences of organized integrative processes. Its functions, among others, are self-expression and the reduction of tensions and conflicts thru social conformity, identification, and the creation of a design for living that permits periodic and harmonious appeasement of most of the needs, and gradual progression toward distant goals.

If education is to profit from the empirical approach here indicated, as Bode (15) pointed out, it will have to accept Dewey's view (28) and abandon its hope for truth as conformity to an alleged immutable cosmic order. Money (57) suggested a kind of compromise in view of the fact that the difference between private delusions, widely accepted beliefs, and scientific facts, is one of actual or possible validation. Since some beliefs, referred to as absolutes, have eased psychosomatic existence, may they not be considered as axioms that might be changed in content by common agreement; thus satisfying the philosophical need for stability and also the scientific need for change? In any case, scientific method has a long way to go in the social realm before it will be able to keep the thinking even of trained minds out of the mental channels of the child, the primitive, and the psychotic. These channels of thinking were mapped in detail by Werner (85) as follows, each with its scientific opposite: the syncretic to

the discrete, the diffuse to the articulated; the indefinite to the definite, the rigid to the flexible, and the labile to the stable.

Learning and the Curriculum

Since the relation of mental hygiene and guidance to the curriculum and teaching is not included in this issue of the REVIEW, suffice it to say with Wright (88) that two kinds of childhood needs should be differentiated: the normative as they are appreciated by the adult, and the psychological as felt by children. But since the child responds not to generalities but to specifics, it is important, if his basic needs are to provide effective motivation, that curriculum activities be cognitively well-structured so that the activities lead clearly to the goals sought.

Blair (11) indicated the nature of the psychologically effective curriculum as one which makes provision for varying maturity and experience levels, gears learning activities to pupil needs and goals, provides units of experience that have structure and meaning for the pupil, and selects and appraises projected pupil activities in terms of their transfer value to life situations. Brownell (19), however, pointed to the discrepancy between learning experiments and improvement in teaching, and called for long-term studies of the learning process in the classroom. He contended (18) that less emphasis in initial learning should be placed on speed and accuracy in the product, and more on improvement of the process and the establishment of principles transferable to new procedures.

Detailed applications of educational psychology to the processes of learning and instruction are to be found in the Forty-Ninth Yearbook of the National Society for the Study of Education (58). In this volume, a number of authors who themselves have long been conducting research in this field interpreted their findings and those of their colleagues. Following chapters on the nature of learning and of motivation, a second section describes the ways children learn motor types of activities, concepts and generalizations, interests and attitudes, personal and social adjustments, esthetic responses, and the technics of problem solving. Implications of learning principles are then pointed out for the different school levels and for teaching procedures.

English (31) presented a brief discussion of the nature of learning and a history of learning theory, while the most intensive and extensive treatment was given by Hilgard (45), who critically reviewed the current theories. Tolman (78) sought to explain the divergencies in theory by asserting that there is more than one kind of learning and listed six kinds including field expectancies, field cognition modes, drive discriminations and motor patterns. A detailed report of the psychological studies from which the theories are derived is to be found in the *Annual Review of Psychology* (70), the first issue of which appeared last year. In it there is a critical review of learning theory, with a 101-item bibliography by Melton, an analysis of problem-solving processes by Johnson, a report of

growth and age changes especially in motor functions and mental abilities by Jones and Bayley, and a review of studies of assorted items from the field of educational psychology by Cronbach.

Piaget (62) continuing his long series of studies on the genetics of mental functions traced four stages in the development of what he called the moral judgment of the child by analyzing children's acceptance of the rules in the game of marbles. Gebhard (37) found that the attractiveness of an activity is determined not only by past experience of success but by the expectation of future success. Grace (39) concluded that verbal approval was more effective with the well-adjusted and emotionally stable. Postman (63), drawing from a 332-item bibliography, summarized the history and present status of the law of effect. In this connection, mention should be made of Thorndike's *Selected Writings from a Connectionist's Psychology* (76), in which studies published from 1913 to 1947 were chosen and arranged by the author himself including seven on learning.

Postman (65) is the senior author of one study in which it was found that forgetting in the form of retroactive inhibition is smaller when a change of set (e.g., direction of association or type of logical relationship) is used. In another study (64) he concluded that the subject's readiness for a particular type of test is a factor influencing set.

A 136-item bibliography accompanies an article (36) on the measurement of transfer of training which concluded that various methods of measurement suggest that different functions are being measured. Not only is it time that some of these functions are isolated, but the conditions under which what is learned in school will be used when needed require still further study.

School experimentation is bedeviled by the almost insuperable difficulty of the control of innumerable variables. Some, however, have faced up to the task. Anderson (2) found little difference in the result when pupils were taught arithmetic by a "drill method" (connectionist) and a "meaning method" (gestalt), altho the latter proved superior, for pupils scoring high on ability but low on initial achievement, in improving transfer to different kinds of materials.

A study of pupil interests (47) revealed that variations are determined largely by opportunities and incentives of the environment, which means that the learning factor is important; and since elementary pupils revealed more interest in school than high-school pupils, it was concluded that the schools can use their influence to create more satisfactory learning situations.

Studies of learning when learner differences are extreme have important implications for the wide range of abilities in the schools. Cruickshank (25) found that mentally retarded boys were less competent than normal boys of the same mental age in solving arithmetic problems. Strauss and Lehtinen (72) summarized 20 years of outstanding research on brain-injured children, reviewing especially-devised test situations, the characteristic behavior found, and applications to learning situations. Gesell (38)

added a collection of papers reporting significant aspects of his work at the Yale Clinic previous to his retirement. And Terman and Oden (74) published the fourth volume of the *Genetic Studies of Genius—The Gifted Child Grows Up*, a 25-year follow-up of the original superior group, with educational and other implications, among which is the conclusion that in spite of the environmentalist's efforts, the hereditary hypothesis seems to stand up.

General Sources Based on Research Studies with Implications for the Curriculum and Teaching

Brickman (17) reviewed 16 texts and reference works in the field of educational psychology which were published during the years 1945-1948, and since then other texts have appeared including those by Beaumont and Macomber (8), Simpson (67), and Trow (79). Specific relationships of educational measurements and of a knowledge of individual differences to the curriculum were pointed out by Freeman (35) and Cook (24) respectively. Williams (86), after a survey of 223 titles, analyzed the approaches directed toward reducing and controlling intergroup tensions to which curriculum activities can make an important contribution.

Growth factors influencing the curriculum have received detailed standard treatment by a number of authors including Breckenridge and Vincent (16) and Hurlock (48, 49). Rasey (66) brought out a unique volume which develops the implications of the whole-child concept and includes reports from the autobiographies of 1600 students with critic-teacher comments. Olson (60) is the author of a significant report of research which has been continuing over a period of 20 years. The results of longitudinal studies are presented with important implications for elementary-school activities. Remedial reading, self-selection, and promotional policies, among other problems, receive attention. Beck in *Human Growth* (9) described the physiological changes accompanying adolescence as was done in the film by the same name. Havighurst (42) defined an interesting concept, the "developmental task," as one which, if successfully accomplished, leads to happiness and success with later tasks, but if not results in unhappiness, disapproval by society, and difficulty with later tasks.

At the elementary-school level, Averill (5) prepared a textbook for the whole period, and Forest (33) for students of early childhood education. Lee and Lee (52) emphasized the "integrative approach" in handling the elementary-school subjects, and Hildreth (44) developed the principles of organized and unified learning in harmony with behavioral development, interpreting them in terms of realistic life experiences.

At the high-school level two rather unique documents have appeared. One of them (73) presents in pamphlet form discussions of a hypothetical workshop group relating learning to diverse viewpoints and to curriculum experiences. The other (43), the "Prairie City" studies of the development of personality, is full of implications for programs of character educa-

tion. Mention should also be made of a selected list of 72 references on gifted children (82), and of the Yearbook of the National Society for the Study of Education on *The Education of Exceptional Children* (59).

Curriculum and Co-curriculum—What Shall Students Learn?

While curriculum revisions are predominantly in the field of social learning, among the others that might be selected for special mention is Cureton's (26) work on physical fitness appraisal and guidance, which, along with other influences is likely to have the effect of improving the physical education program.

Luchins and Luchins (54) carried forward the structural approach to the comprehension of spatial relationships, supplementing Wertheimer's chapter on the area of a parallelogram which appeared in his *Productive Thinking*. Geometry teachers will find here suggestions for improving pupil comprehension. Meaning in arithmetic was studied by Van Engen (83) who favored what he called the concept of operational arithmetic, in which meanings are derived from acts or operations, in contrast with the social-meaning theory, the structural-meaning theory, and the nihilistic theory of numbers as meaningless symbols, which latter is perhaps far too prevalent.

A number of papers at the college level deal with the place of educational psychology in the training of teachers. Anderson (1, 4) defined the field of educational psychology, enumerating the contributions it can make to the education of teachers and indicated suggestions for content. Trow (80) carried the analysis further enunciating the objective as effective pupil participation, this to be attained in proportion to the extent to which the teacher can learn to structure the school environment, organize activities (curriculum), recognize proper objectives in terms of needs and values, and teach appropriate behavior (knowledge, skills, and attitudes). Details were elaborated by others: Blair analyzed the content of various texts (12) and pointed out what teachers should know about adolescence (13). Bruce indicated relationships with general psychology (21) and the importance of a knowledge of child development (20). Freeman (34) and Cook (23) emphasized the importance of a study of individual differences and of educational measurement (24) for the curriculum and for the education of teachers.

The direct approach has been made to the high-school pupil in order to facilitate his social learning thru the medium of the textbook. Thorpe (77) discussed understanding ourselves and others, maintaining personal and social integrity, character and religion, and personality and the welfare of society. Smart and Smart (68) were primarily concerned with the feelings and attitudes of children and their parents, and Duvall (30) prepared a text for family living which includes chapters on personality development, family interrelationships, boy-girl relationships, and preparation for marriage.

Weiner (84) reported on the prolonged preacademic curriculum of the Wayne County Training School and furnished a guide for the objective observation of preacademic achievements, a program designed for high-grade feeble-minded children, but which should be taken to heart by elementary teachers in regular schools. The important implications of play therapy for general educational activities were elaborated by Axline (6) and helpful hints for an elementary-school council were provided by O'Toole (62).

The lush growth of group dynamics at Bethel and elsewhere forces the question of its place in the regular school situation where the teacher perforce has the roles both of leader and of resource person, as well as others. After doing background reading on group dynamics (10) and the psychodrama technic (40) developed by Moreno, the reader may wish to consider some of the implications of considering the class as a group (75, 81).

From the social-work angle, group work has been going on for some time, and Strang (71) showed its relevance to schools and institutions of higher learning. Such efforts would seem appropriate since Bath (7) in a follow-up study found little to distinguish the winners from the non-winners of a junior high-school efficiency certificate in a good citizenship program of 20 years ago. Perhaps the most promising program for the future was initiated by the Horace Mann-Lincoln Institute of School experimentation. If effective improvements are to be made in the curriculum they will be made not so much as a consequence of what is done to teachers as of what they themselves do. This involves (46) research on the educational program thru cooperative teacher research and planning. More schoolwork than in the past will probably be carried on thru problem-centered group activities (32). This term designates an educational process by which teachers and students work cooperatively to solve problems related to the experiences, interests, and concerns of young people, in the process of which attitudes are structured and self-evaluation is encouraged.

Bibliography

1. ANDERSON, GEORGE LESTER. "Educational Psychology and Teacher Education." *Journal of Educational Psychology* 40: 275-84; May 1949.
2. ANDERSON, GEORGE LESTER. "Quantitative Thinking as Developed Under Connectionist and Field Theories of Learning." In Swenson, Esther; Anderson, G. Lester; and Stacey, Chalmers L. *Learning Theory in School Situations*. Minneapolis: University of Minnesota Press, 1949. 103 p.
3. ANDERSON, GEORGE LESTER. "Theories of Behavior and Some Curriculum Issues." *Journal of Educational Psychology*. 39: 133-40; March 1948.
4. ANDERSON, GEORGE LESTER. "What the Psychology of Learning Has To Contribute to the Education of the Teacher." *Journal of Educational Psychology* 41: 362-65; October 1950.
5. AVERILL, LAWRENCE A. *The Psychology of the Elementary School Child*. New York: Longmans, Green and Co., 1949. 459 p.
6. AXLINE, VIRGINIA MAE. *Play Therapy: The Inner Dynamics of Childhood*. Boston: Houghton Mifflin Co., 1947. 379 p.

7. BATH, JOHN A. "A Study of Selected Participants and Non-Participants in a Program Directed Toward the Development of Initiative and Good Citizenship." *Journal of Experimental Education* 16: 161-75; March 1948.
8. BEAUMONT, HENRY, and MACOMBER, FREEMAN G. *Psychological Factors in Education*. New York: McGraw-Hill Book Co., 1949. 318 p.
9. BECK, LESTER F. *Human Growth*. New York: Harcourt, Brace and Co., 1949. 124 p.
10. BENNE, KENNETH D.; BRADFORD, LELAND P.; and LIPPITT, RONALD. *Group Dynamics and Social Action*. New York: Anti-Defamation League of B'nai B'rith, 1950. 62 p.
11. BLAIR, GLENN M. "How Learning Theory Is Related to Curriculum Organization." *Journal of Educational Psychology* 39: 161-66, March 1948.
12. BLAIR, GLENN M. "The Content of Educational Psychology." *Journal of Educational Psychology* 40: 267-74; May 1949.
13. BLAIR, GLENN M. "What Teachers Should Know About the Psychology of Adolescence." *Journal of Educational Psychology* 41: 356-61; October 1950.
14. BODE, BOYD H., and OTHERS. *Modern Education and Human Values*. Pittsburgh: University of Pittsburgh Press, 1947. 165 p.
15. BODE, BOYD H. "John Dewey's Philosophy of Education." *New Republic* 121: 10-39, October 1949.
16. BRECKENRIDGE, MARIAN E., and VINCENT, ELIZABETH LEE. *Child Development*. Revised edition. Philadelphia: Saunders Co., 1943. 1949. 622 p.
17. BRICKMAN, WILLIAM W. "Educational Psychology: A Review." *School and Society* 68: 218-23; September 1948.
18. BROWNELL, WILLIAM A. "Criteria of Learning in Educational Research." *Journal of Educational Psychology* 39: 170-82; March 1948.
19. BROWNELL, WILLIAM A. "Learning Theory and Educational Practice." *Journal of Educational Research* 41: 481-97; March 1948.
20. BRUCE, WILLIAM F. "How Can the Psychology of Development in Infancy and Childhood Help Teachers?" *Journal of Educational Psychology* 41: 348-55; October 1950.
21. BRUCE, WILLIAM F. "The Relations of Educational Psychology with General Psychology." *Journal of Educational Psychology* 40: 261-66; May 1949.
22. CASWELL, HOLLIS L. "Influence of John Dewey on the Curriculum of American Schools." *Teachers College Record* 51: 144-46; December 1949.
23. COOK, WALTER W. "Individual Differences and Curriculum Practice." *Journal of Educational Psychology* 39: 141-418; March 1948.
24. COOK, WALTER W. "What Educational Measurement in the Education of Teachers?" *Journal of Educational Psychology* 41: 339-47; October 1950.
25. CRUICKSHANK, WILLIAM M. "Arithmetic Ability of Mentally Retarded Children." *Journal of Educational Research* 42: 161-70, 279-88; November-December 1948.
26. CURETON, THOMAS K. *Physical Fitness Appraisal and Guidance*. St. Louis: C. V. Mosby Co., 1947. 566 p.
27. DENNIS, WAYNE, editor. *Current Trends in Social Psychology*. Pittsburgh: University of Pittsburgh Press, 1948. 299 p.
28. DEWEY, JOHN. *Reconstruction in Philosophy*. Enlarged edition. Boston: Houghton Mifflin Co., 1948. 224 p.
29. DOLLARD, JOHN, and MILLER, NEAL E. *Personality and Psychotherapy*. New York: McGraw-Hill Book Co. 1950. 488 p.
30. DUVALL, EVELYN MILLIS. *Family Living*. New York: Macmillan Co., 1950. 410 p.
31. ENGLISH, HORACE B. *Learning as Psychotechnology*. Columbus: Ohio State University, 1949. 81 p.
32. EVANS, HUBERT M., editor. "The Problem-Centered Group and Personal-Social Problems of Young People." *Teachers College Record* 51: 438-59; April 1950.
33. FOREST, ILSE. *Early Years at School*. New York: McGraw-Hill Book Co., 1949. 381 p.
34. FREEMAN, FRANK S. "The Study of Individual Differences in the Education of Teachers." *Journal of Educational Psychology* 41: 366-72; October 1950.
35. FREEMAN, FRANK S. "How the Curriculum Is Evaluated and Modified Through Educational Measurement." *Journal of Educational Psychology* 39: 167-69; March 1948.
36. GAGNE, ROBERT M.; FOSTER, HARRIET; and CROWLEY, MIRIAM E. "The Measurement of Transfer of Training." *Psychological Bulletin* 45: 97-130; March 1948.

37. GEBHARD, MILDRED E. "The Effect of Success and Failure upon the Attractiveness of Activities as a Function of Experience, Expectation, and Need." *Journal of Experimental Psychology* 38: 371-88; August 1948.
38. GESELL, ARNOLD. *Studies in Child Development*. New York: Harper and Brothers, 1948. 224 p.
39. GRACE, GLORIA LAUER. "The Relation of Personality Characteristics and Responses to Verbal Approval in a Learning Task." *Genetic Psychology Monographs* 37: 73-99; 1948.
40. GRAMBS, JEAN E. "Dynamics of Psychodrama in the Teaching Situation." *Sociatry* 1: 383-99; March 1948.
41. HARSH, CHARLES M., and SCHRICKEL, H. G. *Personality, Development and Assessment*. New York: The Ronald Press Co., 1950. 518 p.
42. HAVIGHURST, ROBERT J. *Developmental Tasks and Education*. Chicago: University of Chicago Press, 1948. 86 p.
43. HAVIGHURST, ROBERT J., and TABA, HILDA. *Adolescent Character and Personality*. New York: John Wiley and Sons, 1949. 315 p.
44. HILDRETH, GERTRUDE. *Child Growth Through Education*. New York: The Ronald Press Co., 1948. 437 p.
45. HILGARD, ERNEST R. *Theories of Learning*. New York: Appleton-Century-Crofts, 1948. 409 p.
46. HORACE MANN-LINCOLN INSTITUTE OF SCHOOL EXPERIMENTATION. "The Social-Cultural Context of the School Program." *Teachers College Record* 49: 325-29; February 1948.
47. HORACE MANN-LINCOLN INSTITUTE OF SCHOOL EXPERIMENTATION. "Child Development and the Curriculum." *Teachers College Record* 49: 314-24; February 1948.
48. HURLOCK, ELIZABETH B. *Adolescent Development*. New York: McGraw-Hill Book Co., 1949. 566 p.
49. HURLOCK, ELIZABETH B. *Child Development*. Second edition. New York: McGraw-Hill Book Co., 1950. 669 p.
50. JOHN DEWEY SOCIETY. *Intercultural Attitudes in the Making*. Ninth Yearbook. New York: Harper and Brothers, 1947. 246 p.
51. KLUCKHOHN, CLYDE, and MURRAY, HENRY A., editors. *Personality: In Nature, Society, and Culture*. New York: Alfred A. Knopf, 1948. 561 p.
52. LEE, JONATHAN MURRAY, and LEE, DORIS MAY. *The Child and His Curriculum*. Second edition. New York: Appleton-Century-Crofts, 1950. 710 p.
53. LEFLEY, RAY, editor. *Value: A Cooperative Inquiry*. New York: Columbia University Press, 1949. 487 p.
54. LUCHINS, ABRAHAM S., and LUCHINS, EDITH H. "A Structural Approach to the Teaching of the Concept of Area in Intuitive Geometry." *Journal of Educational Research* 40: 528-33; March 1947.
55. MACLEAN, MALCOLM S. "Adolescent Needs and Building the Curriculum." *Trends in Student Personnel Work*. (Edited by E. G. Williamson.) Minneapolis: University of Minnesota Press, 1949. p. 27-39.
56. MILLER, NEAL E. "Theory and Experiment Relating Psychoanalytic Displacement to Stimulus-Response Generalization." *Journal of Abnormal and Social Psychology* 43: 155-78; April 1948.
57. MONEY, JOHN. "Delusion, Belief, and Fact." *Psychiatry* 11: 33-38, February 1948.
58. NATIONAL SOCIETY FOR THE STUDY OF EDUCATION. *Learning and Instruction*. Forty-Ninth Yearbook, Part I. Chicago: University of Chicago Press, 1950. 352 p.
59. NATIONAL SOCIETY FOR THE STUDY OF EDUCATION. *The Education of Exceptional Children*. Forty-Ninth Yearbook, Part II. Chicago: University of Chicago Press, 1950. 350 p.
60. OLSON, WILLARD C. *Child Development*. Boston: D. C. Heath and Co., 1949. 417 p.
61. O'TOOLE, JOHN F., JR. "A Study of the Elementary School Student Council." *Elementary School Journal* 50: 259-67; January, 1950.
62. PIACET, JEAN. *The Moral Judgment of the Child*. Glencoe, Ill.: Free Press, 1948. 418 p.
63. POSTMAN, LEO J. "The History and Present Status of the Law of Effect." *Psychological Bulletin* 44: 489-563; November 1947.
64. POSTMAN, LEO J., and JENKINS, WILLIAM O. "An Experimental Analysis of Set in Rote Learning." *Journal of Experimental Psychology* 38: 683-89; December 1948.
65. POSTMAN, LEO J., and POSTMAN, DOROTHY L. "Change in Set as a Determinant of Retroactive Inhibition." *American Journal of Psychology* 61: 236-42; April 1948.

66. RASEY, MARIE I. *Toward Maturity*. New York: Hinds, Hayden, and Eldredge, 1947. 242 p.
67. SIMPSON, ROBERT G. *Fundamentals of Educational Psychology*. New York: J. B. Lippincott Co., 1949. 380 p.
68. SMART, MOLLIE S., and SMART, RUSSEL C. *Living and Learning with Children*. Boston: Houghton Mifflin Co., 1949. 271 p.
69. SNYGG, DONALD, and COMBS, ARTHUR W. *Individual Behavior, A New Frame of Reference*. New York: Harper and Brothers, 1948. 386 p.
70. STONE, CALVIN P., editor. *Annual Review of Psychology*. Stanford, Calif.: Annual Reviews, 1950. 330 p.
71. STRANG, RUTH. "Group Work in Schools and Institutions of Higher Learning." *A Decade of Group Work*. (Edited by Charles E. Hendry.) New York: Association Press, 1948. p. 95-104.
72. STRAUSS, ALFRED A., and LEHTINEN, LAURA E. *Psychopathology and Education of the Brain-Injured Child*. New York: Grune and Stratton, 1947. 220 p.
73. SUGARMAN, MYRTLE F., editor. *Effective Learning for Use in Junior High School*. Denver Public Schools, 1949. 72 p.
74. TERMAN, LEWIS M., and ODEN, MELITA H. *The Gifted Child Grows Up*. Stanford, Calif.: Stanford University Press, 1947. 448 p.
75. THELEN, HERBERT A. "Human Dynamics in the Classroom." *Journal of Social Issues* 6: 30-55; 1950.
76. THORNDIKE, EDWARD L. *Selected Writings from a Connectionist's Psychology*. New York: Appleton-Century-Crofts, 1949. 370 p.
77. THORPE, LOUIS P. *Personality and Youth*. Dubuque, Iowa: William C. Brown Co., 1949. 378 p.
78. TOLMAN, EDWARD C. "There Is More than One Kind of Learning." *Psychological Review* 56: 144-55; May 1949.
79. TROW, WILLIAM CLARK. *Educational Psychology*. Revised edition. Boston: Houghton Mifflin Co., 1950. 761 p.
80. TROW, WILLIAM CLARK. "Educational Psychology Charts a Course." *Journal of Educational Psychology* 40: 285-94; May 1949.
81. TROW, WILLIAM CLARK, and OTHERS. "Psychology of Group Behavior." *Journal of Educational Psychology* 41: 322-38; October 1950.
82. U. S. OFFICE OF EDUCATION. "Selected References on Gifted Children." *Understanding the Child* 17: 56-64; April 1948.
83. VAN ENGEL, HENRY. "An Analysis of Meaning in Arithmetic." *Elementary School Journal* 49: 321-29, 395-400; February-March 1949.
84. WEINER, BLUMA BERYL. "The Use of Systematic Classroom Observation To Aid in Curriculum Planning and Guidance for Young Mentally Retarded Boys." *American Journal of Mental Deficiency* 52: 331-36, April 1948.
85. WERNER, HEINZ. *Comparative Psychology of Mental Development*. Revised edition. Chicago: Follett Publishing Co., 1948. 564 p.
86. WILLIAMS, ROBIN M., JR. *The Reduction of Intergroup Tensions: A Survey of Research on Problems of Ethnic, Racial, and Religious Group Relations*. Social Science Research Council Bulletin No. 57, 1947. 153 p.
87. WOODRUFF, ASAHEL D. "Motivation Theory and Educational Practice." *Journal of Educational Psychology* 40: 33-40; January 1949.
88. WRIGHT, HERBERT F. "How the Psychology of Motivation Is Related to Curriculum Development." *Journal of Educational Psychology* 39: 149-56; March 1948.

CHAPTER III

Design and Pattern of the Curriculum

ARTHUR W. GILBERT

THE pattern of curriculum content actually being employed in teaching the nation's children is apparently being affected by several strong trends or pressures. Foremost among these, in its immediate results, is a public clamor for more emphasis on the 3 R's. Not based on any research data showing real loss in efficiency in teaching the 3 R's, this pressure has nevertheless had the effect of causing administrators to reevaluate their school programs and has given new pragmatic value to the objective measurement of achievement in these skills. A substantial byproduct of this whole movement is a renewed interest in the technical details of skilled teaching of the 3 R's, which rests on the mass of research done, for the most part, between 1920 and 1940.

Another trend, powered chiefly from within school circles, is to bring the systematic study of human relations definitely into the realm of learning experiences planned for children. The relatively intangible nature of the outcomes sought by this means, and the all-important influence of the teacher's attitude and interpersonal relationships, have given added impetus to the "action research" movement which has made its most substantial contribution in this area.

Elementary Curriculum Trends and Present General Status

Something of the status of curriculum design and content in 1949 can be inferred from the study of literature since 1890 made by Shores (72), altho only two of the 130 titles there referred to are as late as 1948. Two major movements—minimum essentials, and activity—are still under way, with research in the former centering upon improvement of instruction, diagnosis, and remedial methods in the separate subject areas; in the latter, focusing upon psycho-biological studies of child growth and development. Shores finds a third movement—social reconstruction—assuming greater proportions, tho it is not yet "a current dominant influence upon the elementary-school curriculum." Caswell (11) expresses the view that as a result of depression and war there has been an increasing emphasis upon the search for a curriculum "which would meet with effectiveness and directness the problems and conditions of our society," and he further draws together (12) descriptions of curriculum work in nine localities which, while focusing on the processes of changing the curriculum, do give some idea of the modifications in learning experiences which

are being provided for pupils. In a questionnaire study of 50 cities over 100,000 in population, Toulouse (79) found evidence of a trend toward the organization of curriculum materials in terms of problems and needs of children, and of increased use of resource units by teachers. By staff visits to 84 selected elementary schools in the United States and Canada, the Educational Policies Commission (57) was able to report examples of current practice which illustrate the main points in its idealized school program.

Elementary School Subjects and Special Topics

The contribution of recent research to teaching of arithmetic is analyzed by Fehr (22) who is especially critical of the lack of conclusiveness it offers in respect to social utility, transfer of training, and use of sensory aids. Research seems to have been more effective in promoting proper attention to readiness and meaning in teaching arithmetic.

A science curriculum can be soundly built on a series of 25 basic principles which Fisher (24) found in study of the literature, including one to the effect that it should be constructed of materials drawn from the child's own environment, and another that it consider primarily problems of living and social needs. One phase of a broad science program—conservation—has received considerable emphasis during this period, particularly in a survey of current practices in schools all over the United States made by the ASCD (5). Analysis of these practices seems to indicate preoccupation with local specific resources and a lack of attention to some basic understandings—such as principles of balance in the natural environment and a working classification.

Landis (49) draws some conclusions about sex education in the school program from a questionnaire study of 307 pairs of college girls and their mothers. He finds that a much larger percent of girls in the present generation are receiving sex information from their parents at an earlier age, and premarital advice from special sources. Despite this improvement in the use of what his respondents considered the best source of information (parents), more than 50 percent of them indicated that the school should provide systematic instruction in this area.

Religious Education

Because of the great interest in the subject, especially after the Supreme Court decision in the *McCullum* case (1948), a survey of the status of religious education in the public schools was made by the Research Division of the NEA (56). Replies to a questionnaire by 2639 school systems showed that 26.8 percent had some kind of association with a program of religious education. These included schools in 43 states, and actively involved about 14 percent of the pupils enrolled in them. Comparisons are possible with previous studies made by the NEA.

Camping

Weil (81) reports on a carefully controlled situation involving fifth- and seventh-grade pupils from New York City who spent three and one-half weeks in camp. Each pupil was paired with a noncamper and objective evaluation of progress was made in such areas as health, arithmetic, nature study, vocabulary, language arts, and science. In eight of the 10 comparisons, the advantage was with the camping group, tho in only five was the difference statistically significant. Practical benefits of camping programs to school administrators are surveyed in detail in a whole issue of the *National Elementary Principal* (62). Both Harms (31) and Joy (43) analyze the trends in camping experiences since 1900 and find too many conventional city activities in present camp programs. They call for a judicious return to more primitive camp conditions and a careful study of the real purpose of this kind of experience.

General Trends in Secondary Curriculum

French (26) evaluates a five-year period in terms of growth toward the patterns suggested in "Education for All American Youth" and finds the most significant change in practice to be the modifications brought about by application of the principle that the school program should meet the 10 imperative needs of youth. Two other trends are (a) emphasis on common learnings for psychological reasons and (b) provision of more practical instruction for older youth. Herriott (33) shows how the "imperative needs" have been employed to modify a curriculum which retains its general subjectmatter organization. Rahn (63) suggests three other guides to curriculum change besides imperative needs; viz. developmental tasks of youth, social cruciality, and growth in values underlying democracy. Rogers (65) restates the 10 imperative needs in terms of junior high-school youth and applies them in some detail to a school program. Other trends which Rogers considers substantial, for the junior high at least, are emphasizing the development of moral and spiritual values, grouping for purposes of special instruction, and recognition of the need for more effective teaching of reading skills.

Newsom (60) looks over a period of change in secondary-school programs and notes significant alteration in the guidance activities now being employed, a decline in the relative importance of textbooks as instructional material, and greatly increased attention to general education.

Two studies, using more precise methods, give results which show how slowly the changes are actually taking place. Romine (66) got usable questionnaire replies from more than 400 secondary schools representing every one of the 48 states, and well scattered as to size and type of community. Of the 31 desirable practices listed on the questionnaire, only three were found to be generally receiving more emphasis. College entrance requirements are still a potent factor, and there is not yet much evidence of teacher-pupil planning or improved instruction in technics of reading.

Ivins, Fox, and Segel (39) carried out an intensive evaluation of the student body of an Indiana high school, using appropriate instruments to measure ability, achievement, attitudes, and social adjustment. On comparing the results with the school's stated philosophy and course offerings, they came to the conclusion that the curriculum was not suited to the pupils' abilities and did not make adequate provision for individual differences. Selection of a strong average school was made deliberately so that the findings should not be attributed to an individual school's unusual shortcomings.

Health Education

In the field of health education, Kilander (46) notes a trend toward more emphasis on teaching an understanding of the scientific background of good health—an approach which is becoming more important as statistics show a decline in deaths due to communicable diseases (which the community can deal with by policing methods), and an increase in mortality rates from diseases which only the individual, thru assuming personal responsibility, can control.

Driver Education

Driver education has expanded rapidly, and the literature is replete with descriptions of various plans that can be employed. There is however, little carefully-documented evidence as to a resulting decrease in accidental death or property loss, or as to the relative merit of different instructional plans. A study (6) of 2200 teen-age drivers in Delaware, half of whom had had training in driver education classes, showed that the trained group had about 60 percent fewer arrests, accidents and warnings than the untrained. Keiffer (45) reports that Cincinnati practice—in both driver education and driver training—was improved by having pupil representatives from the eight high schools analyze the course and indicate how it could better meet their actual needs.

Statewide Programs of Curriculum Development

Programs of curriculum development, being carried on in many states under the sponsorship or with the cooperation of the State Department of Education, are in varying stages of completeness. The literature is mostly descriptive of plans. Toulouse (78) reports a questionnaire study of the policies and practices in the various states, noting the great increase in activity since 1940, and the tendency of State Departments to add specialized curriculum personnel to aid in the work. A common policy of playing down "prescription" and of encouraging local activity to meet community needs is also reported in this study. A brief report on the framework of a California study and the way it is to be used is made by Fields (23), and

the Maryland plan which emphasized general education is described by Saylor (70).

The most extensive program to be reported during this period is in progress in Illinois where a number of state, local, private, and professional agencies are cooperating in a plan described by Sanford (69). The program provides for two types of projects; (a) four basic studies of problems common to all schools, and (b) studies of problems identified by particular schools. Operations have reached 135 high schools and over 3000 administrators and teachers, and a series of written reports have been widely circulated. A general guide to study of the curriculum has been prepared by Houston, Sanford, and Trump (37), and there is one especially for the junior high school (52). These are special guides for making the four basic studies—on holding power by Allen (2), on hidden tuition costs by Hand (29), on participation in extra-class activities by Hand (30), and on guidance services by Lovelass (51). Recognition of the importance of human relations in curriculum revision is indicated in a separate bulletin in the series by Benné and Muntyan (8). Principal findings in the basic studies are reviewed by Hand (28).

Core Curriculum

From a questionnaire survey made in 1949 Wright (85) concludes that "the core curriculum is not commonly found in America's public high schools." Larger schools, enrolment over 500, reported core plans in 11.3 percent of the cases: smaller schools in only 2 percent. Average of all is 3.5 percent and seven states account for 62 percent of the plans in operation. The core plan is still primarily a junior high-school practice, 86 percent of all programs being in Grades VII, VIII and IX. In the schools having core plans, 72 percent report them in one or two grades only. Core organizations range from subject combinations (English-Social Studies, most commonly) to experience-centered plans.

The philosophy and psychology of core programs of all kinds are treated in many writings of the period, and arguments for and against appear frequently, as do brief or extended descriptions of the specific plans in actual use. But in few cases is there a combination of description and evaluation which would qualify the report as a research study. A report of the Clear Lake Conference (55) summarizes the place of evaluation in planning and carrying out core programs, but does not apply the evaluation to any project under way. Hock (36) describes a program that has been going for several years, but only suggests the evaluation that is to be made.

More thoro evaluation is apparent in four studies of specific core classes. Heisler (32) found that with a seventh grade core class a series of 8 lessons in group dynamics, using discussion manuals, sociograms, and socio-drama, definite progress could be made in acquiring the skills needed. Whittaker (83) used the sequence of high-school units in the Consumer

Education Series with a senior core class meeting on a double-period schedule. Evidence that the desired outcomes were reached was gathered mainly from observation of pupil behavior which showed a high degree of activity and initiative, and unusual progress in arriving at personal decisions regarding social and vocational plans. Mudd (54) gives in detail the story of a three-year experiment with a core program in Grades VII, VIII and IX, including a plan of evaluation using informal means and formal tests. Only the results of informal evaluation are reported, and on the basis of teacher reaction, observation of pupil behavior, and the extensive use of other instructional materials than textbooks it is concluded that the experiment has been successful. It is suggested that the real test is yet to come—How well will the students do later in high school? Evans and Corey (20) applied the pupil-reaction technic of evaluation to a basic living core at the tenth-grade level with mixed results. The pupil responses seemed to indicate less doubt about the methods of core operation than about the content dealt with and the amount of time required for it.

One significant factor in the success or failure of core programs—and probably one reason why they are not oftener put into operation—is the practical difficulty of arranging suitable instructional materials. Alberty (1) finds that the development and use of *resource units* is one promising way of giving teachers the necessary feeling of security to break away from the recitation method with its great reliance upon a single textbook. Reid (64) reports a study of the problems teachers face in selecting instructional materials for core programs which are frequently problem-centered, whereas most of the available materials are subjectmatter centered.

Work Experience

The extent of work-experience programs in secondary-school curriculums was investigated by the Research Division of the National Education Association and reported along with descriptions of plans in operation, in the Twenty-Sixth Yearbook of the AASA (3). Work experience is part of the program in 54 percent of the 500 schools furnishing information, is concentrated in Grades XI and XII, seems to have grown somewhat since the end of World War II, and, where once established, takes a firm hold. Schmaelzle (71), evaluating the program in San Francisco schools, and noting the wide range of activities still available to pupils, suggests that work experience is very useful as a guidance tool. Ivins and Wey (40) describe two projects of the "informal" work-experience type—work not done for pay by an outside employer—and report that when carefully planned in correlation with regular classwork, the outcomes include substantial production and improved attitudes. Dillon (16), after studying the records of over 3000 pupils in the fairly typical work-experience situation, concludes that it increases the holding power of the school (by 16 percent of those in the work programs), that it has no appreciable effect

on scholarship, that it is good for the morale of the pupils (furnishing many of them a first success experience), and that it enables the school to exercise a wholesome influence on working conditions. Bateman (7) set up a situation in which he could test the claim that work experience improves attitudes toward school and school subjects. From school records and the replies on checklists and attitude scales of 263 pairs of boys and girls in Grades XI and XII—one in each pair doing paid work and the other not—he concludes that there are no significant differences attributable to the work experience.

Curriculum in Higher Education

Gerard (27) reports progress in the long-range evaluation plan of the college at the University of Chicago. By equating students who enter the college early and finish its work at Grade XIV with others who do their college work elsewhere, it is expected that conclusive evidence regarding the accelerated program will be forthcoming. Data are being accumulated from psychological and achievement tests, interviews, and schedules of various kinds. In the fourth year of the evaluation program 100 graduating students of the college reached a median percentile of 92 on the Graduate Record Examinations, a favorable comparison with records made by many college students of two years greater maturity.

General education is the common theme at the college as well as at the high-school level, as institutions attempt to work out the best possible curriculum. Fewer electives and some provision for broader foundation work are indicated by Wriston (86) as characteristic of the new curriculum at Brown University—where a foreign language, competence in English, and a higher standard of work are also factors; and by Hewlitt (34) for Amherst—where laboratory sessions or seminars are being emphasized. Trowbridge (80) analyzes the four patterns of general education at the college level; and Johnson (41) describes some developments of the Community College.

In relation to public junior colleges, Hillmer (35) found a great increase in the number of students enrolled in terminal courses in 1948, as compared with the figures for 1941 and 1931. The number had doubled in a decade, and had been multiplied twenty times since 1931. In percent also, the number of students in these terminal courses has also increased—from 20 percent in 1931, to 47 percent in 1948. But Hillmer's figures show that more than half of these terminal students are in the general culture course, which leads him to think that perhaps the junior colleges are failing somewhat to perform their proper function, and are using this general course as a means of salvaging students who would not graduate otherwise.

Life Adjustment Education

The phrase "life adjustment education" is being used to refer to a movement which is expected "to be the means for really putting fire under

such plans as 'general education' and 'education for all American Youth.' " Hull (38) and Jones (42) have given this interpretation in their insistence that the basic consideration is not any particular pattern of school practice or organization but the imperative needs of youth. Douglass (18) points out that life adjustment education is really no more than effective schooling in all the areas of the "seven cardinal objectives" adjusted to fit the needs of *all* children. He also demonstrates, by a thoro treatment of the opportunities for meeting needs of youth by modifications in the usual subjects of the high-school program, that application of the principles of "life adjustment education" need not imply any radical change in design of the school curriculum.

Education for Citizenship

Under the serious pressures of the times much work has been done in the teaching of citizenship, most of which brings us to the general conclusion that the active practice of democracy in education is the best teacher of good citizenship. But Dale (15) found that improvement of citizenship education was considered a major problem by over two-thirds of Ohio superintendents, altho many of the supposedly good practices in citizenship were being employed by the schools. Peters (61) describes a plan, called "democratic, action-centered education," which he developed over a two-year period in 15 schools. The Detroit citizenship study is outlined by Dimond (17) and one of its resultant instruments for evaluating school practices in relation to child growth and citizenship has been published by Weston (82). The first year of the Kansas Study of Education for Citizenship, involving projects in 25 high schools showed (44) that pupils were not making satisfactory gains, probably because the objectives had not been sufficiently defined in terms of pupil behavior. First steps in the development of an even more ambitious experiment in teaching citizenship, made possible by Carnegie funds, are detailed by Russell (67).

Significant studies of "current events" in relation to teaching responsible citizenship are reported by Corbet (14) from 192 colleges, schools, or school systems personally visited by a three-man staff to find outstanding practices; and by Kinney and Dresden (47) who have been carrying on a cooperative project in improving instruction in some California schools thru the use of current materials.

That an instructional period as short as seven weeks can produce measurable changes in pupil's attitudes toward world peace is maintained by Klee (48) as the result of some experimentation with eleventh-grade students. Further evidence that social learnings can be evaluated is given by Foshay (25) who points to the need for adequate description of the behavior to be affected and its relation to the total behavior of the pupil.

Education of Exceptional Children

Under the increasing impact of two basic ideas (education for *all* children, and provision for individual differences) and with more state

financial aid, the special education program has been greatly expanded. Russell and Hill (68) report from a survey of 271 California schools that 43 percent of them have some special classes for immature children aged five and six, and that 50 percent follow a plan of having these children take three years in a primary division instead of two. Changes in curriculum are considered more important even than the time factor. Levison (50) describes the adjustments for the 20 percent of slow-learning children in New York City schools thru (a) a general diploma curriculum, and (b) the CRMD (Children with Retarded Mental Development) classes for those with IQ's between 50 and 80. Evidences of the effectiveness of these plans are found in a larger number of graduates with no retardation, in a reduction of the dropouts, in better adjustment to school, and in better performance on the job after graduation. Martens (53) brings together many illustrations of school practices with the mentally retarded in the revision of an earlier bulletin which, significantly, differs from its predecessor mainly in the inclusion of a chapter on the high school. Practices in the education of the gifted are summarized in a bulletin of the Educational Policies Commission (58). Research in all the various areas of education for exceptional children is brought together in an extensive volume by Baker (59).

Atomic Energy

There is evidence that the greatest effect of the widespread concern for understanding in the matter of atomic energy will not be extensive revision of science courses or introduction of separate atomic energy units, but rather a tremendous increase in emphasis on developing better human relations, more effective group processes, and knowledge of international affairs. This trend is anticipated by Evans (19) who analyzes the school's job as (a) reducing ignorance regarding human relations and atomic energy, (b) developing the technics of group process as a means of reducing ignorance, (c) the deliberate development of democratic attitudes and values, (d) revealing the nature of the work world in an atomic age. Williams (84) describes an atomic energy education project in a large high school, from the first preplanning, thru school assemblies, exhibits, discussions and forums, to a final evaluation of the project by both teachers and pupils which showed, in general, that the intended objectives had been reached. Starr and Leavitt (73) indicate another approach to a school project on atomic energy—thru outlines for special use in other subjects.

Teaching Human Relations

Problems of human relations assume a prominent place in the literature of the period, as already indicated. They cover a wide range and involve varied technics. Keeping elementary-school practices consistent with prin-

ciples of mental hygiene is the theme of an ASCD yearbook staff (4). Bullis and O'Malley (10) provide a second set of lessons by which upper-grade children can come to a better understanding of themselves. Berger (9) shows that high-school students can discover and apply ways of resolving conflicts constructively, under proper conditions. Stiles (74) used discussion technics successfully with 172 middle-grade pupils to produce desired changes in social behavior. In the field of intergroup relations, Taba reports experimental projects on the elementary level (77), in an eighth grade (76), and in secondary schools (75); while Cook brings together the story of cooperative projects in 24 colleges. The Philadelphia Openmindedness Study interpreted by Everett (21) challenges teachers other than those in the original experiment to use the proved methods of reducing prejudice.

Bibliography

1. ALBERTY, HAROLD B. "The Construction and Use of Resource Units in the Social Studies Area." *Redirecting Education*. Philadelphia: School of Education, University of Pennsylvania, 1948. p. 201-209.
2. ALLEN, CHARLES M. *How To Conduct the Holding Power Study*. Circular Series A, No. 51, Illinois Secondary School Curriculum Program, Bulletin No. 3. Springfield, Ill.: Office of the State Superintendent of Public Instruction, 1949. 128 p.
3. AMERICAN ASSOCIATION OF SCHOOL ADMINISTRATORS. *The Expanding Role of Education*. Twenty-Sixth Yearbook. Washington, D. C.: the Association, a department of the National Education Association, 1948. 484 p.
4. ASSOCIATION FOR SUPERVISION AND CURRICULUM DEVELOPMENT. *Fostering Mental Health in Our Schools*. 1950 Yearbook. Washington, D. C.: the Association, a department of the National Education Association, 1950. 320 p.
5. ASSOCIATION FOR SUPERVISION AND CURRICULUM DEVELOPMENT. *Large Was Our Bounty*. 1948 Yearbook. Washington, D. C.: the Association, a department of the National Education Association, 1948. 216 p.
6. ASSOCIATION OF CASUALTY AND SURETY COMPANIES. "Instruction in Safety." *School Review* 53: 377; October 1950.
7. BATEMAN, RICHARD M. "The Effect of Work Experience on the Attitude of High School Students Toward School and School Subjects." *Educational Administration and Supervision* 35: 157-64; March 1949.
8. BENNE, KENNETH, and MUNTAN BOZIDAR. *Human Relations in Curriculum Change*. Circular Series A, No. 51, Illinois Secondary School Curriculum Program, Bulletin No. 7. Springfield, Ill.: Office of the State Superintendent of Public Instruction, 1949. 316 p.
9. BERGER, DONALD W. "Handling Human Relations in Cooperative Learning." *Progressive Education* 26: 180-83; April 1949.
10. BULLIS, HAROLD EDMUND, and O'MALLEY, EMILY E. *Human Relations in the Classroom, Course II*. Wilmington, Del.: Mental Hygiene Society, 1948. 222 p.
11. CASWELL, HOLLIS L. "Unfinished Business in Curriculum Development." *Teachers College Record* 50: 360-69; February 1949.
12. CASWELL, HOLLIS, and OTHERS. *Curriculum Improvement in Public School Systems*. New York: Teachers College, Columbia University, 1950. 462 p.
13. COOK, LLOYD A., editor. *College Programs in Intergroup Relations*. College Study in Intergroup Relations, Vol. I. Council on Cooperation in Teacher Education. Washington, D. C.: American Council on Education, 1950. 366 p.
14. CORBETT, JAMES F., and OTHERS. *Current Affairs and Modern Education*. New York: New York Times Co., 1950. 278 p.
15. DALE, EDGAR. "Survey of Curriculum Problems and Practices in Ohio Schools." *Educational Research Bulletin* 28: 85-92; April 1949.

16. DILLON, HAROLD J. "Work Experience Program." *National Association of Secondary-School Principals Bulletin* 32: 250-55; March 1948.
17. DIMOND, STANLEY E. "The Detroit Citizenship Education Study." *Improving Educational Research*. Official Report of 1948 Meeting. Washington, D. C.: American Educational Research Association, a department of the National Education Association, 1948. p. 153-55.
18. DOUGLASS, HARL R., editor. *Education for Life Adjustment*. New York: The Ronald Press Co., 1950. 491 p.
19. EVANS, HUBERT M. "Challenge of the Atomic Age." *Teachers College Record* 49: 406; March 1948.
20. EVANS, HUBERT M., and COREY, STEPHEN M. "Cooperative Research and Curriculum Improvement." *Teachers College Record* 51: 407-74; April 1950.
21. EVERETT, SAMUEL. "Teachers Combat Prejudice." *NEA Journal* 37: 216-17; April 1948.
22. FEHR, HOWARD F. "Present Research in Teaching Arithmetic." *Teachers College Record* 52: 11-23; October 1950.
23. FIELDS, RALPH R. "California Framework Committee: Progress Report." *California Journal of Secondary Education* 23: 392-97; November 1948.
24. FISHER, LEWIS R. "Guiding Principles in Curriculum Making for Science in Elementary Schools." *School Science and Mathematics* 49: 631-38; November 1949.
25. FOSHAY, ARTHUR W. "Evaluating Social Learnings." *Childhood Education* 26: 65-69; October 1949.
26. FRENCH, WILL. "Education for All American Youth—Five Years After." *NEA Journal* 38: 516-17; October 1949.
27. GERARD, RALPH W. "A Study of Educational Progress." *Journal of Higher Education* 19: 21-32; January 1948.
28. HAND, HAROLD C. *Principal Findings of the 1947-48 Basic Studies of the Illinois Secondary School Curriculum Program*. Circular Series A, No. 51, Illinois Secondary School Curriculum Program, Bulletin No. 2. Springfield, Ill.: Office of the State Superintendent of Public Instruction, 1949. 77 p.
29. HAND, HAROLD C. *How To Conduct the Hidden Tuition-Cost Study*. Circular Series A, No. 51, Illinois Secondary School Curriculum Program, Bulletin No. 4. Springfield, Ill.: Office of the State Superintendent of Public Instruction, 1949. 51 p.
30. HAND, HAROLD C. *How To Conduct the Participation in Extra-Class Activities Study*. Circular Series A, No. 51, Illinois Secondary School Curriculum Program, Bulletin No. 5. Springfield, Ill. Office of the State Superintendent of Public Instruction, 1949. 66 p.
31. HARMS, ERNEST. "The Changing Pattern of the American Children's Camp." *School and Society* 71: 97-99; February 18, 1950.
32. HEISLER, WALTER, and OTHERS. "Group Dynamics: A Junior-High School Class Experiment." *Clearing House* 24: 151-54; November 1949.
33. HERRIOTT, MARION E. "What Is a Functional Program for the Junior High School?" *National Association of Secondary-School Principals Bulletin* 33: 95-108; May 1949.
34. HEWLITT, HORACE W. "Amherst's New Curriculum in Its First Year." *Journal of Higher Education* 19: 365-68; October 1948.
35. HILLMER, M. A. "Terminal Curriculum Offered in Public Junior Colleges in the United States." *Junior College Journal* 20: 128-30; November 1949.
36. HOCK, LOUISE E. "Curriculum Development, Experimental Study at School 42." *Baltimore Bulletin of Education* 26: 11-14; June 1949.
37. HOUSTON, VICTOR M.; SANFORD, CHARLES W.; and TRUMP, J. LLOYD. *Guide to the Study of the Curriculum in the Secondary Schools of Illinois*. Circular Series A, No. 51, Illinois Secondary School Curriculum Program, Bulletin No. 1. Springfield, Ill.: Office of the State Superintendent of Public Instruction, 1948. 44 p.
38. HULL, J. DAN. *A Primer of Life Adjustment Education for Youth*. Chicago: American Technological Society, 1949. 30 p.
39. IVINS, WILSON H.; FOX, WILLIAM H.; and SEGEL, DAVID. "Study of Secondary School Program in Light of the Characteristics and Needs of Youth." Vol. 25, No. 6. *Indiana University School of Education Bulletin*. Bloomington: School of Education, Indiana University, 1949. 69 p.

40. IVINS, WILSON H., and WEY, HERBERT W. "Capitalizing on Educational Values of Informal Work Experience." *School Review* 57: 485-89; November 1949.
41. JOHNSON, B. LAMAR. "College Programs of Less than Four Years—The Community College." *Current Trends in Higher Education, 1948*. Washington, D. C.: Department of Higher Education, National Education Association, 1948. p. 107.
42. JONES, GALEN. "Life Adjustment for Every Youth." *Educational Outlook* 24: 58-65; January 1950.
43. JOY, BARBARA E. "Getting More Real Camping into Camps." *Journal of Health and Physical Education* 19: 18-20; January 1948.
44. KANSAS STUDY OF EDUCATION FOR CITIZENSHIP. *An Evaluation of Citizenship Education in the High School*. Manhattan: Kansas State College Press, 1950.
45. KIEFFER, MILDRED. "Pupils Evaluate Driver Education." *Safety Education* 30: 13-14; October 1950.
46. KILANDER, HOLGER F. "Trends in Health Education in Secondary Schools." *School Life* 31: 6-7; April 1949.
47. KINNEY, LUCIEN, and DRESDEN, KATHARINE. *Better Learning Through Current Materials*. Stanford University: Stanford University Press, 1949. 182 p.
48. KLEE, LORETTA. "How Do You Feel About World Peace?" *Journal of Educational Research* 43: 187-96; November 1949.
49. LANDIS, PAUL H. "Sex Education: The Facts About Two Generations." *Clearing House* 24: 451-55; April 1950.
50. LEVISON, H. H. "What Program for the Slow Learner?" *National Association of Secondary-School Principals Bulletin* 33: 58; May 1949.
51. LOVELASS, HARRY D. *How To Conduct the Guidance Services of the School*. Circular Series A, No. 51, Illinois Secondary School Curriculum Program, Bulletin No. 6. Springfield, Ill.: Office of the State Superintendent of Public Instruction, 1949. 263 p.
52. LOW, CAMILLA M. *Guide to Curriculum Building—Junior High School Level*. Circular Series A, No. 51, Illinois Secondary School Curriculum Program, Bulletin No. 8. Springfield, Ill.: Office of the State Superintendent of Public Instruction, 1950. 181 p.
53. MARTEN, ELISE H. *Curriculum Adjustments for the Mentally Retarded*. United States Office of Education Bulletin 1950, No. 2. Washington, D. C.: Superintendent of Documents, Government Printing Office, 1950. 100 p.
54. MUDD, DOROTHY. "Core Program Uses Evaluation." *Educational Leadership* 8: 82-86; November 1950.
55. NATIONAL ASSOCIATION OF SECONDARY-SCHOOL PRINCIPALS. "Evaluating the Core Curriculum." *National Association of Secondary-School Principals Bulletin* 32: 52-61; November 1948.
56. NATIONAL EDUCATION ASSOCIATION, RESEARCH DIVISION. *Status of Religious Education in the Public Schools*. Washington, D. C.: the Association, 1949.
57. NATIONAL EDUCATION ASSOCIATION AND AMERICAN ASSOCIATION OF SCHOOL ADMINISTRATORS, EDUCATIONAL POLICIES COMMISSION. *Education for All American Children*. Washington, D. C.: the Commission, 1948. 292 p.
58. NATIONAL EDUCATION ASSOCIATION AND AMERICAN ASSOCIATION OF SCHOOL ADMINISTRATORS, EDUCATIONAL POLICIES COMMISSION. *Education of the Gifted*. Washington, D. C.: the Commission, 1950. 88 p.
59. NATIONAL SOCIETY FOR THE STUDY OF EDUCATION. *Education of Exceptional Children*. Forty-Ninth Yearbook, Part II. Chicago: University of Chicago Press, 1950. 350 p.
60. NEWSOM, NATHAN W. "Recent Trends in Curriculum Building in Secondary Schools." *National Association of Secondary-School Principals Bulletin* 32: 116-23; November 1948.
61. PETERS, CHARLES C. *Teaching High School History and Social Studies for Citizenship Training*. Coral Gables, Fla.: University of Miami Bookstore, 1948. 192 p.
62. PINKSTON, EVA G., editor. "Camping Education for the Elementary School Child." *National Elementary Principal* 28: 1-48; February 1949.
63. RAHN, GRANT. "Great Need: Youth Education for Effective Living." *National Association of Secondary-School Principals Bulletin* 32: 39-46; November 1948.
64. REID, CHANDOS. "Instructional Materials and Problem-Centered Teaching." *Teachers College Record* 52: 24-33; October 1950.

65. ROGERS, HELEN J. "Emerging Curriculum of the Modern Junior High School." *National Association of Secondary-School Principals Bulletin* 34: 128-38; April 1950.
66. ROMINE, STEPHEN A. "Some Trends in Secondary School Practices." *School Review* 56: 213-18; April 1948.
67. RUSSELL, WILLIAM F. "The Citizenship Education Project." *Teachers College Record* 52: 77-89; November 1950.
68. RUSSELL, DAVID H., and HILL, RUBY L. "Provision for Immature 5-6 Year Olds in California Schools." *California Journal of Elementary Education* 16: 210; May 1948.
69. SANFORD, CHARLES W. "Challenging Developments in the Illinois Secondary School Curriculum Program." *National Association of Secondary-School Principals Bulletin* 33: 57-65; April 1949.
70. SAYLOR, GALEN. "Maryland Emphasizes Programs in General Education." *Educational Leadership* 5: 282-83; January 1948.
71. SCHMAELZLE, OTTO I. "How a Work Experience Program Operates." *California Journal of Secondary Education* 24: 168-71; March 1949.
72. SHORES, J. HARLAN. *Critical Review of the Research on Elementary School Curriculum Organization, 1898-1949*. Urbana: Bureau of Research and Service, College of Education, University of Illinois, 1949. 29 p.
73. STARR, BENJAMIN, and LEAVITT, ABRAHAM. "Social Studies and Operation Atomic Vision." *High Points* 31: 22-32; April 1949.
74. STILES, FRANCES. "Developing an Understanding of Human Behavior at the Elementary School Level." *Journal of Educational Research* 43: 516-24; March 1950.
75. TABA, HILDA. "Curriculum in Intergroup Relations." *National Association of Secondary-School Principals Bulletin* 33: 1-168; February 1949.
76. TABA, HILDA, and ELKINS, DEBORAH. *With Focus on Human Relations*. Washington, D. C.: American Council on Education, 1950. 227 p.
77. TABA, HILDA, and OTHERS. *Elementary Curriculum in Intergroup Relations*. Washington, D. C.: American Council on Education, 1950. 248 p.
78. TOULOUSE, ROBERT B. "States Look at Their Secondary Schools." *Educational Leadership* 6: 432-35; April 1949.
79. TOULOUSE, ROBERT B. "Curriculum Development Survey." *School Executive* 68: 32-33; August 1949.
80. TROWBRIDGE, HOYT. "General Education in the Liberal Arts College." *Current Trends in Higher Education 1948*. Washington, D. C.: Department of Higher Education, National Education Association, 1948. p. 85.
81. WEIL, TRUDA T. "Camping Has a Place in the Regular Curriculum." *Nations Schools* 44: 27-29; July 1949.
82. WESTON, GRACE, and OTHERS. *Democratic Citizenship and Development of Children*. Detroit: Citizenship Education Study (436 Merrick Avenue) 1949. 43 p.
83. WHITTAKER, CHARLOTTE C. "The Core Approach to Consumer Education." *National Association of Secondary-School Principals Bulletin* 32: 82-89; November 1948.
84. WILLIAMS, ANNA C. "We Exposed Our Children to Atomic Energy." *School Review* 57: 295-99; May 1949.
85. WRIGHT, GRACE S. *Core Curriculum in Public High Schools*. United States Office of Education Bulletin 1950, No. 5. Washington, D. C.: Superintendent of Documents, Government Printing Office, 1950. 32 p.
86. WRISTON, HENRY M. "The Brown University Curriculum." *Journal of Higher Education* 19: 109-15; March 1948.

CHAPTER IV

Teaching Materials

WILLIAM G. BRINK and JOHN X. JAMRICH

THIS chapter will focus attention upon the review of teaching materials in contrast to learning materials. The former includes all materials of a research character which may be of professional use to teachers in guiding and directing the learning of children and youth. The review of research relating to learning materials which will be presented in the following chapter will include content designed primarily to facilitate pupil learning.

Certain trends are clearly discernible as regards research and publications in the area of teaching materials. Of these the following appear to be the most significant: (a) There has been a vast increase in the amount of professional literature in the form of courses of study, units of work, visual and audio-visual aids, and manuals and guides for curriculum development. (b) There has been a gradual shift in the preparation of teaching materials from a preoccupation with textbook learning toward an increasing emphasis upon identifying the life-needs of children and youth and the selection, organization, and grade placement, of learning experiences and activities to meet these needs. (c) In the preparation of courses of study and instructional guides, greater stress is being placed upon the comprehensive treatment of a rather small number of problems, units, or centers of interest rather than upon the encyclopedic treatment of many topics. (d) There has been a growing tendency toward the critical appraisal of teaching materials from the standpoint of their effectiveness in assisting teachers in the improvement of instruction. (e) There has been a growing awareness of the fact that if teaching materials are to serve their greatest value, teacher participation in their preparation is essential. (f) An increasing number of schools and school systems are developing curriculum centers or laboratories to facilitate the preparation of useful teaching materials.

Courses of Study, Units, Manuals

A considerable number of courses of study, resource units, and source materials were published during the period covered by this review. References to illustrations of such materials are cited in the bibliography (11, 17, 31, 32, 37, 62, 83). Of special interest is the rapid growth in the number of resource and teaching units on atomic energy (21, 81).

Discussions regarding the construction and use of resource units have been both general and specific. Typical of the former is the Wisconsin Curriculum Guide (91) which gives a very thoro and practical discussion

of the construction of a resource unit and its application in a "problems approach" to curriculum construction. Tho primarily designed for the junior high-school level, the same principles could be applied at other levels of the school system.

McCusky and Paukner (50) gave a brief description of several bulletins, with guides to their use in curriculum building. Wagner (84) presented an annotated bibliography of curriculum publications emphasizing the general aspects of initiating, implementing, and evaluating curriculum programs. A specific guide of this type is the Illinois Guide to the Study of the Curriculum in the Secondary Schools (44).

A publication of the Denver Public Schools (26) is designed to assist the teacher in planning and developing an instructional unit. This pamphlet presents an outline indicating the essential elements of a unit and illustrates, by concrete example, how the outline is to be utilized. A similar consideration of unit construction primarily for the elementary level is presented by Strickland (76). This pamphlet was prepared to serve as an aid in selecting, preparing, and implementing units of work commensurate with the needs of pupils. Emphasis was placed on the preliminary step of taking an inventory of pupil interest and available resources, keeping in mind that a unit of work is unique with any given group of pupils. Four approaches to choosing a unit of work were listed, namely: (a) by the teacher and pupils out of the interests and contemporary activities of the group; (b) by the teacher and pupils to satisfy both the curriculum requirements of the school, and the needs and interests of the children; (c) by the teacher, from sources listing units of work; and (d) by the teacher, incorporating required textbook materials, but at the same time attempting to meet needs and interests of the children.

Henry (39) has discussed the growth of a unit in English, and McFadden (51) has indicated recent trends in the teaching of biology, with suggestions for the development of a course of study.

Sources of Teaching Materials

Sources of teaching materials have been listed by Williams (89). The educational services of various corporations also provide numerous teaching aids (8, 87). Free or inexpensive teaching materials are readily available. Various lists of these have been prepared by Anderson (5), Hansen (36), Miller (52), Heimers (38), Urbancek (82), Wood (92), and Fowlkes (33).

Evaluation of Printed Materials

Efforts to evaluate teaching materials have been based largely upon empirical evidence. Hillis (41) has stated criteria for good instructional materials. Corey (18) enumerated five primary considerations to be kept in mind in using instructional and teaching materials. These are: (a)

teaching is more effective when a variety of materials is used, (b) the teacher must attempt to keep informed concerning newer teaching materials, (c) the teacher must provide herself with these available materials, (d) public expenditure must be made available for needed materials, and (e) utilization, by the teacher, must be continuously improved.

Criteria for the selection and evaluation of instructional material have been suggested by Potter (65). In her judgment the main elements to be considered are maturity levels of pupils, needs and interest of pupils, diversity of materials, authenticity, availability, and comprehensiveness. In the same article, Potter has given specific illustrations of materials in social studies, arithmetic, and physical education at the elementary-school level.

A survey and appraisal of teaching materials in the area of intergroup relations was published by the American Council on Education (2). Action research in the evaluation of teaching materials was described by Corey (19). Dresden (28) described an experiment in the use of current materials in the classroom.

Teaching Methods, Procedures, and Devices

The Forty-Ninth Yearbook of the National Society for the Study of Education gives an exhaustive presentation of two aspects of teaching method as it concerns the teacher. Part I (60) of this yearbook is devoted to a presentation of basic theory as to how children acquire concepts, generalizations, technics of problem solving, motor-type activities, interests, and motives. The second section of Part I is devoted to a discussion of the application and implementation of the principles at the various grade levels.

Part II of the Forty-Ninth Yearbook (61) is devoted to the education of exceptional children. Section I considers some general aspects of the problem in terms of diagnosis, guidance, types of teachers needed for exceptional children, and the characteristic growth patterns of children. In Section II, attention is given to the nature and needs of specific groups, such as the visually handicapped, speech and acoustically handicapped, mentally handicapped, socially maladjusted, and the gifted.

The 1949 Yearbook of the Association for Supervision and Curriculum Development (7) concerned itself with seven aspects of better teaching. These are: fostering security, promoting cooperative planning, helping pupils develop self-direction, fostering creativity, helping pupils develop values, providing opportunities for social action, and helping pupils evaluate learning. Each element was considered in detail, with illustrations of how the concept could be implemented in a classroom situation.

Specific research in certain subject areas and at various age levels included a study of picture writing by Oftedal (64), in which an attempt was made to describe and evaluate picture writing for the teacher, and also to indicate some of its uses, as, for example, in testing reading comprehension.

In evaluating clay modeling, Bullard (15) has shown the value of kinesthetic and sensory-motor experiences in learning new words at the first-grade level. Barrett (9) conducted an investigation designed to aid the classroom teacher in making effective use of art tests in determining the range of classroom ability and in discovering gifted children.

Vocabulary growth and reading comprehension, as they are affected by comic books, were studied by Sperzel (74). Three groups of 15 pupils each were matched with regard to IQ, socio-economic level, and school ability as estimated by teachers. Each child in two of the groups read at least five comic books per week, and some read as many as 12. One of these two groups was required to keep word lists. The third group continued with its regular reading program. All three groups showed gains in word comprehension and vocabulary, but the differences were not statistically significant.

Seashore (70) studied the size and growth of vocabulary as related to the learning of language skills. He found that conventional estimates of vocabulary size were considerably below actuality. Word growth was found to be approximately 5000 words per year, as compared to earlier estimates of around 500 words per year. On the basis of these findings, Seashore drew the following conclusions: (a) language teaching has been started far below the children's level of competence, (b) children have not been given the opportunity to develop language skills commensurate with their abilities, and (c) excessive emphasis has been placed on drill with specific words in reading and spelling when equal or greater growth could have been achieved by other means. Herzberg and others (40) have given specific suggestions to teachers for using various media in promoting learning.

The status and rate of growth of arithmetic knowledge and abilities in children in Grades I and II were studied by Brueckner (14). Brownell and Moser (13) investigated the relative merits of decomposition and of equal additions as subtraction procedures in the third grade. Evidence definitely favored the use of decomposition as the procedure to be preferred with children of average ability.

Smith (72) considered the problem of what constitutes readiness for long division in arithmetic. Five hundred fifth-grade pupils were given an intelligence test, a pretest of skills essential in long division, and a final mastery test following instruction in long division. Thru the use of correlation technics, it was found that the mastery of the essential skills is the primary factor in determining readiness for long division.

In studying the leisure-time reading of 686 junior high-school pupils, Andersen (4) found that comic books ranked first, fiction was second, with biographies and westerns third and fourth respectively. Scanlon (68) reported the 100 most popular books of children's fiction as ranked on the basis of withdrawals, over a six-month period, from a public library in St. Paul, Minnesota. It was found that 64 of the 100 most popular books were published since 1930, and that 28 of these books were animal stories.

Teaching materials for the visually handicapped child were discussed by Hughes (43) who has placed less emphasis upon special teaching technics for pupils with impaired vision, and greater emphasis upon the selection of effective materials and appropriate classroom features. Hughes described the place of such materials as maps, globes, charts, typewriters, talking books, and reading services.

Nameny (57) presented the elements of a music education program for the mentally retarded. Gunzburg (34) investigated the reading interests of subnormal boys. Continued attention has been given to the education of the gifted children. The National Education Association (59) has published a booklet, useful for the teacher, entitled *Education of the Gifted*.

The enrichment of learning at the elementary level thru the use of community resources was described by the University of Minnesota Elementary Demonstration School Faculty (54). Katona (46) has described the use of socio-drama in education, and a publication of Teachers College, Columbia University (79) gives detailed instructions on the preparation and use of sociograms.

In the area of reading, Bond and Handlan (12) have discussed the adaptation of instruction in reading to individual differences. The pamphlet is designed to serve as a reference manual for the teacher who desires better developmental, diagnostic, and remedial instruction in reading, adjusted to the ability, special interests, and needs of each child.

Some suggestions for developing clear thinking thru the teaching of geometry were given in a University of Kansas publication (45). The use of models in the teaching of geometry was described by Schacht (69). Here the emphasis is on developing geometric concepts thru the use of dynamic models. A valuable source of information regarding the history and use of surveying instruments is the Nineteenth Yearbook of the National Council of Teachers of Mathematics (47). Included is a description of appropriate and simple classroom surveying activities designed as a practical application of trigonometric and geometric principles.

Suggestions for science classroom materials and facilities were given by Raskin (66) for the elementary level, and by Miller (53) for the secondary level.

The place of group planning and activity in education was discussed in two publications of Teachers College, Columbia University (78, 80). The meaning of cooperative planning in education and various specific teacher aids are given in the *Guide to Study and Experimentation in Cooperative Planning in Education*. The mechanics of the teacher-pupil planning process with specific illustrations of application are given in *The Teacher's Role in Pupil-Teacher Planning*.

Libraries and Curriculum Centers

Libraries of curriculum, instruction, and teaching aids are the subject of articles by Spears (73), DeBernardis (24), the January 1950 issue of

Montana Education (56) and the January 1950 issue of *Educational Leadership* (35). Drag (27) studied selected current practices in the establishment and use of curriculum laboratories.

Audio-Visual Materials and Guides to Their Uses

Bibliographies and film guides include the annual and monthly publications of the H. W. Wilson Company (90). A bibliography of audio-visual materials for teachers at the elementary level has been prepared by Weinman (86). This publication includes references to materials for all elementary-grade levels—such materials as charts, graphs, maps, excursions, exhibits, museums, motion pictures, slides, radio, and recordings. A listing of audio-visual materials of special significance in the teaching of mathematics was compiled by Chapdelaine (16).

The technics of teaching with films were described by Dale (22). A Cathedral film (42) has been prepared which deals with the problem of how to use films in teaching. The establishment of a cooperative film library in districts where finances are limited was studied by Roos (67).

Films on the Teaching Process

Significant advances have recently been made in the production of audio-visual aids for teacher education. The Twenty-Ninth Yearbook of the Association for Student Teaching (6) presents the most extensive discussion in this area. In this publication consideration is given to the place and function of audio-visual materials in teacher education, the production and utilization of audio-visual materials, and the implementation of audio-visual programs. Included also is an annotated bibliography of one hundred and one selected films for teacher education. Two recent investigations clearly indicate the imperative need of better education of teachers in the use of audio-visual aids (58, 25).

Corey (20) described and evaluated five films concerned with pedagogy and teacher-pupil relationships. He considered these the best films of their kind. Several films on methods and procedures in teaching appeared during this period (3, 1, 29, 49, 77, 85).

Radio, Television, and Recordings

Radio and television received growing emphasis during the period covered by this report. Willey and Young (88) have discussed the place of radio at the elementary-school level, while Novokovsky (63) has given suggestions for the use of the radio in the teaching of the language arts.

Educational Services (30) provides a listing of educational recordings. The use of recording and playbacks in counseling was discussed by Biddle (10).

Evaluation of Audio-Visual Aids

A detailed and extensive summary of research in the area of audio-visual materials was given by Dale, Finn, and Hoban (23). This review

covered the use of audio-visual materials in a variety of teaching and learning areas. Included also was a review of pertinent research on the extensiveness of audio-visual materials used by the Armed Services during the war. Knowlton (48) has prepared an evaluation form for film appraisal. The report includes a publishers' survey of films and the extent of their use.

Sterner (75) conducted an investigation of audio-visual media at the high-school level. The study was designed (a) to discover whether the medium or the interest has the greater attraction for the adolescent; (b) to investigate habits of high-school pupils in media such as radio, motion pictures, books, comic strips, newspapers, and magazines; and (c) to study adventure, humor, and love as interest in the life of adolescents. It was found that the media or print, still pictures, motion pictures, and radio are not so attractive in themselves as the material they present, and, that of the three interests—adventure, humor, and love—adventure is the favorite with adolescents.

Two research studies were concerned with the effectiveness of films in education. Smith (71) investigated the relationship between test-intelligence and pupil achievement in three situations: (a) films as the sole means of presentation, (b) teacher demonstration as sole means of presentation, and (c) a combination of films and teacher demonstrations. Positive correlations were found between intelligence and achievement. The correlations were higher for the section in which films were used exclusively, but the differences were not statistically significant.

Mitchell (55) investigated the effect of radio programs on silent reading achievement. Using 91 sixth-grade pupils, it was found that variety programs had a detrimental effect upon achievement, while musical programs had no such adverse effect. Pupils of higher ability showed gains with the musical program background.

Bibliography

1. *A Day in the Life of a Five Year Old*. 16 mm, sound, 20 min. Teachers College, Columbia University, Bureau of Publications, 525 W. 120th Street, New York 27, New York. 1949.
2. AMERICAN COUNCIL ON EDUCATION. *Intergroup Relations in Teaching Materials: A Survey and Appraisal*. Report of the Committee on the Study of Teaching Materials in Intergroup Relations. Washington, D. C.: the Council, 1949. 232 p.
3. *American Teacher*. 16 mm, sound, 15 min. March of Time Forum Edition, 369 Lexington Avenue, New York, New York. 1947.
4. ANDERSEN, ESTHER M. "A Study of Leisure-Time Reading of Pupils in Junior High School." *Elementary School Journal* 48: 258-67; January 1948.
5. ANDERSON, HAROLD A. "Instructional Materials Useful to Teachers." *School Review* 57: 337-39 September 1949.
6. ASSOCIATION FOR STUDENT TEACHING. *Audio-Visual Materials in Teacher Education*. Twenty-Ninth Yearbook. Lock Haven, Pa.: the Association, 1950. 261 p.
7. ASSOCIATION FOR SUPERVISION AND CURRICULUM DEVELOPMENT. *Toward Better Teaching: Report of Current Practices*. 1949 Yearbook. Washington, D. C.: the Association, a department of the National Education Association, 1949. 282 p.
8. ASSOCIATION OF AMERICAN RAILROADS. *On the Track of Some Good Teaching Aids*. Washington, D. C.: the Association, School and College Service, 1948. 8 p.

9. BARRETT, HARRY O. "An Examination of Certain Standardized Art Tests To Determine Their Relation to Classroom Achievement and to Intelligence." *Journal of Educational Research* 42: 398-400; January 1949.
10. BIDDLE, RICHARD A. "Play-Backs Improve My Counseling Techniques." *Clearing House* 23: 229-32; December 1948.
11. BOARD OF EDUCATION OF THE CITY OF NEW YORK. *Arithmetic, Kindergarten—Grade Three*. Curriculum Bulletin 1947-48, No. 2. New York: the Board, 1949. 74 p.
12. BOND, GUY L., and HANDLAN, BERTHA. *Adapting Instruction in Reading to Individual Differences*. Series in Individualized Instruction, No. 5. Minneapolis: University of Minnesota Press, 1948. 82 p.
13. BROWNELL, WILLIAM A., and MOSER, HAROLD E. *Meaningful vs. Mechanical Learning: A Study in Grade III Subtraction*. Research Studies in Education, No. 8. Durham, N. C.: Duke University Press, 1949. 207 p.
14. BRUECKNER, LEO J. *Arithmetic Knowledge and Abilities of Children in Grades I and II*. Minneapolis: Educational Publishers, 1948. 100 p.
15. BULLARD, LUCILE L. "Evaluating Clay Modeling as an Aid in Vocabulary Building in First Grade Reading." *Mississippi Educational Advance* 39: 9-11; May 1948.
16. CHAPDELAINE, PERRY A. *Teacher-Constructed Mathematical Motion Picture Films*. Nashville, Tenn.: George Peabody College for Teachers, 1948. 135 p. (Master's Thesis)
17. CHICAGO PUBLIC SCHOOLS. *Rescue Units for English I (Grade 9)*. Chicago: Department of Public Instruction and Guidance, Chicago Public Schools, 1944. 104 p. (Mimeo.)
18. COREY, STEPHEN M. "Imperatives in Instructional Materials." *Educational Leadership* 5: 211-14; January 1948.
19. COREY, STEPHEN M. "Pilot Schools for Instructional Materials." *School Review* 56: 136-38; March 1948.
20. COREY, STEPHEN M. "Teach Training Films." *School Review* 56: 134-36; March 1948.
21. CRARY, RYLAND W., and OTHERS. *The Challenge of Atomic Energy*. New York: Teachers College, Columbia University, 1948. 92 p.
22. DALE, EDGAR. "Teaching with Pictures." *Social Education* 12: 102-104; March 1948.
23. DALE, EDGAR, and OTHERS. "Research on Audio-Visual Materials." *Audio-Visual Materials of Instruction*. Forty-Eighth Yearbook, Part I. National Society for the Study of Education. Chicago: University of Chicago Press, 1949. p. 253-83.
24. DE BERNARDIS, AMO. "Portland's Instructional Materials Center." *Educational Screen* 28: 13-15; January 1949.
25. DE KIEFFER, ROBERT E. *The Status of Teacher-Training in Audio-Visual Education in the Forty-Eight States*. Iowa City: State University of Iowa, 1948. 148 p. (Doctor's thesis)
26. DENVER PUBLIC SCHOOLS. *Manual for Using the Form for Planning and Developing an Instructional Unit*. Denver: Denver Public Schools, 1949. 8 p.
27. DRAC, FRANCIS L. "What Is a Curriculum Laboratory?" *Educational Leadership* 5: 235-40; January 1948.
28. DRESDON, KATHERINE W. "Current Materials: 48 Teacher Experiments in New Uses." *Clearing House* 23: 143-46; November 1948.
29. EDUCATION THROUGH ART AND HOME ECONOMICS. 16 mm, sound, 12 min. Bureau of Publications, Teachers College, Columbia University, 525 W. 120th Street, New York 27, New York. 1947.
30. EDUCATIONAL SERVICES. 1949. *Listing of Educational Recordings for More Effective Learning*. Washington, D. C.: Educational Services, 1949. 15 p.
31. FLORIDA STATE DEPARTMENT OF EDUCATION. *A Guide for Teaching Science in the Elementary School*. Tallahassee: the Department, 1948. 88 p.
32. FLORIDA STATE DEPARTMENT OF EDUCATION. *Experiencing the Language Arts: Sequential Program from Kindergarten Through Grade 12*. Bulletin No. 34. Tallahassee: the Department, 1948. 312 p.
33. FOWLKES, JOHN G., editor. *Elementary Teachers Guide to Free Curriculum Materials*. Randolph, Wis.: Educators Progress Service, 1950. 341 p.
34. GUNZBURG, HERBERT C. "The Subnormal Boy and His Reading Interests." *Library Quarterly* 18: 264-74; October 1948.
35. HANKAMP, GERTRUDE, editor. "Materials for Instruction." *Educational Leadership* 5: 209-84; January 1948.

36. HANSEN, HENRY R. "Good Tools for Classrooms." *National Parent Teacher* 43: 74-76; November 1948.
37. HARVEY, C. C. "A Unit of Work on the American Newspaper." *National Association of Secondary-School Principals Bulletin* 33: 65-72; January 1949.
38. HEIMERS, LILL. *Free Teaching Aids in Fourteen Subjects*. Montclair, N. J.: New Jersey State Teachers College, 1948. 53 p. (Mimeo.)
39. HENRY, GEORGE H. "The Growth of a Unit." *English Journal* 37: 341-47; September 1948.
40. HERZBERG, MAX J., editor. "New Aids in Education." *Education* 70: 215-73; December 1949.
41. HILLIS, CHARITY RUTH. *Preparation and Evaluation of Instructional Materials on Community Agencies*. Bureau of School Service Bulletin, Vol. 21, No. 2. Lexington: College of Education, University of Kentucky, 1948. 174 p.
42. *How To Teach with Films*. 16 mm, sound, 16 min. Cathedral Films, 1970 Cahuenga Boulevard, Hollywood 28, California.
43. HUGHES, BERNICE. "Materials and Equipment for the Partially Seeing Child." *Journal of Exceptional Children* 15: 139-43; February 1949.
44. ILLINOIS STATE DEPARTMENT OF PUBLIC INSTRUCTION. *Guide to the Study of the Curriculum in the Secondary Schools of Illinois*. Springfield: the Department, 1948. 42 p.
45. KANSAS, UNIVERSITY OF. *Some Suggestions for Teaching Geometry To Develop Clear Thinking*. Department of Education Publication, Vol. 2, No. 7. Lawrence: University of Kansas, 1949. 20 p.
46. KATONA, ARTHUR. "Social Drama in Education." *Educational Forum* 13: 462-67; May 1949.
47. KIELY, EDMUND R. *Surveying Instruments, Their History and Classroom Use*. Nineteenth Yearbook, National Council of Teachers of Mathematics. New York: Teachers College, Columbia University, 1947. 411 p.
48. KNOWLTON, PHILIP A., compiler. *A Report to Educators on Teaching Films Survey*. New York: Harper and Brothers, 1948. 117 p.
49. LEARNING THROUGH COOPERATIVE PLANNING. 16 mm, sound, 20 min. Bureau of Publications, Teachers College, Columbia University, 525 W. 120th Street, New York 27, New York. 1948.
50. MCCUSKEY, DOROTHY, and PAUKNER, LILLIAN C. "Materials for Improved Schools." *Educational Leadership* 5: 230-35; January 1948.
51. MCFADDEN, MERLE G. "Recent Trends in the Teaching of Biology and Some Recommendations Relative to the Development of a Course of Study." *Science Education* 34: 47-51; February 1950.
52. MILLER, BERNARD W., editor. *Commercial Supplementary Teaching Materials*. Consumer Education Study of the National Association of Secondary-School Principals. Washington, D. C.: the Association, a department of the National Education Association, 1949. 24 p.
53. MILLER, JULIUS S. "Experiments for the Science Class." *School Science and Mathematics* 50: 4; January 1950.
54. MINNESOTA, UNIVERSITY OF. *Using Community Resources*. Minneapolis: University of Minnesota Press, 1948. 102 p.
55. MITCHELL, ADELLE H. "The Effect of Radio Programs on Silent Reading Achievement of 91 Sixth Grade Students." *Journal of Educational Research* 42: 460-70; February 1949.
56. MONTANA EDUCATION. "Teaching Aids Library." *Montana Education* 26: 14-15; January 1950.
57. NAMENY, GRACE W. "Inaugurating a Music Education Program for Mentally Retarded." *Journal of Exceptional Children* 15: 134-38; February 1949.
58. NATIONAL EDUCATION ASSOCIATION, RESEARCH DIVISION. "Audio-Visual Education in City School Systems." *Research Bulletin* 24: 131-70; December 1946.
59. NATIONAL EDUCATION ASSOCIATION AND THE AMERICAN ASSOCIATION OF SCHOOL ADMINISTRATORS, EDUCATIONAL POLICIES COMMISSION. *Education of the Gifted*. Washington, D. C.: the Commission, 1950. 88 p.
60. NATIONAL SOCIETY FOR THE STUDY OF EDUCATION. *Learning and Instruction*. Forty-Ninth Yearbook, Part I. Chicago: University of Chicago Press, 1950. 352 p.
61. NATIONAL SOCIETY FOR THE STUDY OF EDUCATION. *The Education of Exceptional Children*. Forty-Ninth Yearbook, Part II. Chicago: University of Chicago Press, 1950. 350 p.

62. NEW YORK, UNIVERSITY OF THE STATE OF. *Industrial Region of Western Europe. Social Studies Resource Units: Grades 5 and 6.* Albany: University of the State of New York, 1949. 38 p.
63. NOVOKOVSKY, GERTRUDE. "Radio and Language Arts." *Elementary English* 25: 103-108; February 1948.
64. OFTEDAL, LAURA. "Picture Writing: A New Tool in Creative Expression." *Elementary School Journal* 49: 37-46; September 1948.
65. POTTER, GLADYS L. "Selecting and Using Instructional Materials." *Principal and Curriculum Building*. Twentieth Yearbook, California Elementary School Principals Association. Oakland: the Association, 1948. 171 p.
66. RASKIN, ABRAHAM. "Services and Facilities for the Elementary Science Classroom." *School Science and Mathematics* 50: 371-75; May 1950.
67. ROOS, CARL A. "A Cooperative Film Library." *National Education Association Journal* 37: 625; December 1948.
68. SCANLON, WILLIAM J. "One Hundred Most Popular Books of Children's Fiction Selected by Children." *Elementary English* 25: 83-97; February 1948.
69. SCHACHT, JOHN F. *Manual for J. F. Schacht Dynamic Geometry Instruments.* Chicago: Welch Scientific Company, 1949. 43 p.
70. SEASHORE, ROBERT H. "The Importance of Vocabulary in Learning Language Skills." *Elementary English* 25: 137-52; March 1948.
71. SMITH, HERBERT A. "The Relationship Between Intelligence and the Learning Which Results from the Use of Educational Sound Motion Pictures." *Journal of Educational Research* 43: 241-49; December 1949.
72. SMITH, LAWRENCE J. *Readiness for Two-Digit Division in Arithmetic.* Evanston, Ill.: Northwestern University, 1951. (Doctor's thesis)
73. SPEARS, HAROLD. "The School Library as the Coordinating Agency for the Curriculum." *School Review* 56: 400-403; September 1948.
74. SPERZEL, EDITH Z. "The Effect of Comic Books on Vocabulary Growth and Reading Comprehension." *Elementary English* 25: 109-13; February 1948.
75. ETERNER, ALICE P. *Radio, Motion Picture, and Reading Interests.* Contributions to Education, No. 932. New York: Teachers College, Columbia University, 1947. 102 p.
76. STRICKLAND, RUTH G. *How To Build a Unit of Work.* Bulletin 1946, No. 5. Washington, D. C.: Superintendent of Documents, Government Printing Office, 1946. 48 p.
77. *Teacher as Observer and Guide.* 16 mm, sound, 20 min. Bureau of Publications, Teachers College, Columbia University, 525 W. 120th Street, New York 27, New York. 1946.
78. TEACHERS COLLEGE, COLUMBIA UNIVERSITY. *Guide to Study and Experimentation in Cooperative Planning.* New York: Teachers College, Columbia University, 1949. 37 p.
79. TEACHERS COLLEGE, COLUMBIA UNIVERSITY. *How To Construct a Sociogram.* New York: Teachers College, Columbia University, 1947. 37 p.
80. TEACHERS COLLEGE, COLUMBIA UNIVERSITY. *The Teacher's Role in Pupil-Teacher Planning.* New York: Teachers College, Columbia University, 1947. 27 p.
81. U. S. OFFICE OF EDUCATION, FEDERAL SECURITY AGENCY. *Introductory Bibliography on Atomic Energy.* Bibliography No. 2. Washington, D. C.: U. S. Office of Education, Federal Security Agency, 1949.
82. URBANCEK, JOSEPH J., column editor. "New Teaching Aids." *Chicago Schools Journal* 28: 82-83; January-June, 1947.
83. VIRGINIA STATE DEPARTMENT OF EDUCATION. *Health Education: Grade 8-12.* Richmond: the Department, 1948. 279 p.
84. WAGNER, GUY W. "Curriculum Guides Reflect Current Practices." *Educational Leadership* 8: 229-33; January 1951.
85. *We Plan Together.* 16 mm, sound, 20 min. Bureau of Publications, Teachers College, Columbia University, 525 W. 120th Street, New York 27, New York. 1948.
86. WEINMAN, CONSTANCE. *Bibliography on Audio-Visual Instructional Materials for Teachers in the Elementary School.* New York: Teachers College, Columbia University, 1947. 29 p.
87. WESTINGHOUSE ELECTRIC CORPORATION. *1947-48 Teaching Aids.* Pittsburgh: School Service, Westinghouse Electric Corporation, 1949. 24 p.

88. WILEY, ROY D., and YOUNG, HELEN A. *Radio in Elementary Education*. Boston: D. C. Heath and Co., 1948. 450 p.
89. WILLIAMS, CATHERINE. *Sources of Teaching Material*. Columbus: Bureau of Educational Research, Ohio State University, 1949. 12 p.
90. WILSON, H. W., Co. *Educational Film Guide*. New York: H. W. Wilson Co., 1950. 163 p.
91. WISCONSIN STATE DEPARTMENT OF PUBLIC INSTRUCTION. *Guides to Curriculum Building—The Junior High School Level*. Wisconsin Cooperative Educational Planning Program, Bulletin No. 8. Madison: Wisconsin Department of Public Instruction, 1950. 181 p.
92. WOOD, HUGH B., editor. *Sources for Free and Inexpensive Teaching Materials*. Curriculum Bulletin No. 58. Eugene, Oreg.: University Cooperative Store, 1949. 22 p.

CHAPTER V

Learning Materials

HENRY J. OTTO and DONALD McDONALD

LEARNING materials are defined as materials used directly with children. Books, audio-visual aids, charts, maps, globes, exhibit materials, and objects, places, and natural phenomena constituting the focus of excursions are classified here as learning materials. The three-year period covered by this review did not include studies regarding all of these types of learning materials. The studies that were made and were attainable for this review are summarized below.

Readability and Difficulty

Three studies dealt with this aspect of learning materials. Mallinson (15) analyzed five series of elementary-school science books for Grades IV, V, and VI by means of the Flesch formula. Five 100-word samples were taken from each of the 15 books. His conclusions were: (a) textbooks in elementary science for these grades are far too difficult for those for whom they are written; (b) the average difficulty of the books for Grade IV is too difficult for the average beginning fifth-grader; (c) the sixth-grade books are only slightly difficult, probably suitable for the average sixth-grader; (d) none of them could be classed as easy reading material; (e) no indication is given that the earlier portions of the books are any easier than the later portions.

In a second study by Mallinson (14), also using the Flesch formula, 34 junior high-school textbooks in science were analyzed for reading difficulty. His findings were: (a) textbooks in all three grades are likely to cause some reading difficulty for all but the better students; (b) relative difficulty seems greatest in textbooks for Grade VII; (c) average level of difficulty of all texts for Grade VIII was below that for Grade VII; (d) there was no evidence that the easier portions of the texts are found toward the front of the books; (e) differences between the levels of difficulty of the easiest and most difficult books are statistically significant.

The reading of three of the most popular children's encyclopedias was studied by Staph (21) with the use of the Lorge formula. The reading ability of 257 children in Grades III to VI in the school in which the encyclopedias were in use was compared with the reading difficulty of the encyclopedias. The reading difficulty grade equivalent for the encyclopedias was: *World Book*, 7.23; *Britannica Junior*, 7.57; and *Compton's*, 8.0. These figures on reading difficulty merely indicate relative difficulty since each encyclopedia has a wide range of difficulty of material. The majority

of scientific material was found to be less difficult than the social science content. Comparison of children's reading ability in Grades III to VI with the reading difficulty of the encyclopedias indicated that many children in Grade III could read the easier selections in any one of the encyclopedias; that in this school one-third of the third-graders had reading ability of grade 5.0 or more and hence could read the easier portions of the encyclopedias with no more assistance than would be required in an ordinary reading lesson; and that 79 percent of the fifth-graders would have difficulty using large portions of *Compton's*, and that 53 percent of the sixth-graders were capable of using most of the material in *Britannica Junior* and 64 percent could manage comfortably the materials in *World Book*.

Content

Fifteen studies explored various problems dealing with the content of learning materials. Christenberry (2) undertook a study to ascertain (a) the extent to which classical literature suitable for correlation with units in social studies and science in the primary grades was available and (b) the effectiveness of its correlation in such units. It was found that much suitable material was available. Three-hundred-seventy selections were given experimental use in four second-grade sections. Her conclusion was that the correlation plan is workable, reasonable, and should be used. Fisher's (5) analysis of 43 widely read children's books was made to determine (a) how family life appears in children's literature and (b) whether the materials on family life were suitable for teaching democratic family living. It revealed that these children's books showed realism in parent-child relations and a trend toward democratic rather than autocratic family life. The author concluded that children's literature is a rich source of material on family life and should not be overlooked as material in education for democratic living.

Vocabulary analyses were the focus of four studies. Kearney (11) analyzed the data gathered by the Works Progress Administration in a study of the vocabularies of 121 first-grade readers published between 1930 and 1940. This group of 121 books consisted of 42 preprimers, 38 primers, and 41 first readers. The words were tabulated to show frequency of occurrence of each. The study shows that the most common words in all the books are also the words that occur in 50 percent or more of the books commonly used in the first grade. There appeared to be widespread agreement that reading materials should be limited to certain words and that a high degree of repetition is desirable. Gentry (6) studied the vocabulary load of 66 preprimers published since 1930. Six hundred different words were found, 250 appearing in three or more of the preprimers and 125 in nine or more of the books. Simon (20) tried to determine the vocabulary load of nine primers, the children's connotations of certain words used in primers, and the relation between children's initial

word knowledge and subsequent reading ability. Altho many words were used with several meanings, the majority of words were used with only one meaning, that meaning being the one known to most children. The investigation showed a positive but low relationship between children's initial connotations and their achievement in reading five months later. Lewry (13) analyzed 10 of the most widely used manuscript writing textbooks for first grade to ascertain the 100 words most commonly found in them. Altho these texts averaged only from 100 to 200 words each, 539 different words were found in the 10 texts; only 128 of these words were common to three or more of the books. The 100 most frequently found words are offered as a basic vocabulary for manuscript writing in first grade.

Read (18) studied the pictures found in 115 readers. Colored pictures outnumbered the black and white pictures but in a decreasing ratio as the grade level increased. As the level of the reader moves upward pictures are used less frequently, there being a sharp decrease in frequency between second and third grade.

Lampkin (12) analyzed twelve science textbooks to ascertain content devoted to teaching the scientific method of inquiry. He studied the prefaces of the books to ascertain author interest in this objective. His findings reveal that the scientific method of inquiry was a direct objective in seven books, incidental in three, and not mentioned in two. The average amount of space per book devoted to this objective was 10 percent. McClure (17) examined 47 junior and senior high-school social studies texts published between 1945 and 1949 to find the nature and amount of attention given to atomic energy. Of 11 books published in 1945 eight made no mention of atomic energy, while of the 17 books published in 1948 and 1949 only two lacked some mention of atomic energy. American and world history textbooks included more references to atomic energy than did geography, civics, and twelfth-grade social studies textbooks. The aspects of atomic energy which are most commonly treated are the bomb and the need for international control. Harsch (8) studied the science content in 134 intermediate grade readers adopted in Texas between 1919 and 1950. Her conclusions were (a) there has been an increase in the amount of science content in readers from 1919 to 1950; (b) the nature of the content reflects the development of elementary science based on the needs and interests of children; (c) readers can serve as a basis for much instruction in science.

High-school psychology textbooks were examined by Engle (4). High-school textbooks in psychology seem to have no commonly accepted content material, altho the authors are fairly well agreed on objectives. Present-day emphasis is on problems of personality and mental hygiene with less emphasis being placed on biological foundations. Very little space is devoted to technical topics of measurement and statistical technics. Johnson (10) developed criteria and then appraised 10 reading readiness books and their manuals to see if they make enough provision for develop-

ing the features of language development, mechanics of reading, and good social and work habits. The criteria used in this appraisal were developed by studying the literature in the field of reading readiness and listing the recommendations of well-known writers as to what should be included in reading readiness programs. The conclusions show that no one reading readiness book found will fulfil all the requirements of the criteria. Also, that no one book, when used alone, is adequate for planning a profitable prereading program.

Trends in the content of geography textbooks for elementary schools were determined by McAulay (16). He analyzed 30 texts for each 10-year period between 1928 and 1948. Major trends were summarized by him as follows: (a) *Objectives*—changed from the learning of specific skills about each country in 1928 to the acquisition of geographical skills necessary for the development of the one world concept in 1948. (b) *Content*—changed from the acquiring of facts for information in 1928 to the attempt in 1948 at developing attitudes and concepts thru study of essential facts concerning the place of our home as a land in the world community. (c) *Method*—increasing use from 1928 to 1948 of color, more pictorial and less written content, of suggested activities and related workbooks, and of full page colored maps and graphs. (d) *Correlation of objectives, content, and method*—objectives stated in 1928 were slightly farther removed from content and methods than in 1938 and 1948. (e) *Emphasis on social studies*—from 1928 there was a great increase in the number of texts fusing geography with social studies. (f) *Emphasis on facts*—texts of 1928 were designed for use as the principal tool of instruction, in 1948 as one of many tools. (g) *Over-all elementary pattern*—in 1928 the majority of texts were concerned with particular grades or topics, each an isolated packet having little relationship with the others, whereas, by 1948 texts were grouped, generally, into a series of three, all written by the same author or co-authors, with a developing sequence gradually enlarging the child's geographic experience from the local community to the entire world.

The use of the rural background in third-grade arithmetic books was Dreier's (3) project. The proportion of the material with a rural background was less than 3 percent in each of the six texts and not more than 25 percent could be classified as urban. Hinckley (9) investigated nine series of arithmetic textbooks published between 1940 and 1949 to determine the social ideas presented therein. His findings show that: (a) the American family as portrayed in textbooks is disjointed—women are not employed, there is lack of activities for boys and girls, and lack of mother's contact with children outside of the kitchen; (b) in looking at democratic processes special interest pressures are ignored and the complex problems of intergroup relations are avoided; (c) the economic world of textbooks fails to show the labor organizations or labor unrest, concentration of economic power in the hands of certain groups, and the area of economic planning; (d) there is little focusing of attention on peace

and understanding between nations and little evidence of interest in world community.

Use of Books

Risinger (19) conducted a 10-week experiment with eight control and eight experimental eighth-grade classes to compare growth in problem-solving ability. The experimental groups were taught consumer information about housing while the control groups used traditional arithmetic materials. His conclusions were: (a) use of experimental materials may result in pupil ability to solve problems superior to pupil ability expected from use of traditional materials; (b) teachers may replace traditional text materials with consumer information on housing with confidence that pupil ability to solve problems will be enhanced; (c) actual and current data may be substituted for abstract and hypothetical data with reasonable assurance that pupil ability to solve problems will be augmented.

Hamilton's (7) study of the use of arithmetic textbooks in 50 selected classrooms showed that teachers followed rather consistently the plan of teaching suggested in the texts. The second portion of her investigation involved the introduction into these classes of 17 lessons based on best theory as determined by a review of the literature. Eighty percent of the teachers expressed preference for the newer materials.

Use of Films

If a body of information is translated into films, do people learn more if this information is presented in one long film in a single session or if presented in short films in two or more sessions? This issue was tested by Ash (1) in two separate experiments, one involving 11 classes of undergraduate psychology students and the other 10 companies of Navy recruits. The *Ape and Child* series and *The Dynamics of Experimental Neuroses*, four reels each, were used for the psychology students. Three classes were shown the whole series in a single session. Two classes were shown the series in two sessions, two reels each. Two other classes were shown each series in four sessions, one reel each. After each session the group filled out a rating form which showed something about film length and interest. One week following the mid-point of showing, a 78 item multiple choice test on the content of the films was given. A control group took the test without seeing the films. For all groups of psychology students the inter-methods differences in mean total test score may be attributed to chance fluctuations. The experiment with Navy personnel was conducted in a similar manner with similar results. The psychology groups which were shown the entire series in one session were the only groups who felt that the films were too long.

General Comment

The research studies made available during this three-year period have been summarized under the preceding four headings: Readability and

Difficulty, Content, Use of Books, and Use of Films. There were no studies of learning materials dealing with content or nature of use of community resources, concepts and meanings, use of maps, charts, globes, and exhibit materials, use of slides, or television. The writers feel justified, therefore, in saying that the range of studies was rather limited, that perhaps too much time was devoted to analyzing "what is" and not enough research effort directed toward the discovery and appraisal of new materials. Except for a few of them, the studies summarized herein represent "piecemeal packets" of research, such as are within the scope of candidates for the master's and doctor's degrees. There is noticeable absence of comprehensive, well-integrated research, the type that is feasible only for institutional research bureaus with adequate funds and personnel or other similarly established research groups. The challenge is to find ways whereby the research interests of individual students can be channeled into and become integral parts of comprehensively designed research projects.

Bibliography

1. ASH, PHILIP. *The Relative Effectiveness of Massed Versus Spaced Film Presentation*. State College, Pa.: Pennsylvania State College, 1949. 213 p. (Doctor's thesis)
2. CHRISTENBERRY, AGNES REBECCA. *Correlations in Classical Literature in the Primary Grades*. Austin: University of Texas, 1949. 147 p. (Master's thesis)
3. DREIER, WILLIAM H. "Rural Background Found in Six Third-Grade Arithmetic Texts Published Between 1942 and 1946." *Journal of Educational Research* 42: 299-306; December 1948.
4. ENGLE, THELBURN L. "An Analysis of High School Textbooks in Psychology." *School Review* 58: 343-47; September 1950.
5. FISHER, HELEN H. "Family Life in Children's Literature." *Elementary School Journal* 50: 516-20; May 1950.
6. GENTRY, LILLIAN. "A Study of the Vocabulary Load of Sixty-Six Pre-Primers." *Journal of Educational Research* 43: 525-32; March 1950.
7. HAMILTON, JEAN FRANCES. *A Study of Textbook Material in the Field of Arithmetic*. Iowa City: State University of Iowa, 1950. 288 p. (Doctor's thesis)
8. HARSCH, CLARICE ANN. *A Study of the Science Content of Texas State Adopted Intermediate Readers, 1919-1950*. Austin: University of Texas, 1950. 122 p. (Master's thesis)
9. HINCKLEY, RACHEL. *American Culture as Reflected in Mathematics Schoolbooks*. New York: Teachers College, Columbia University, 1949. 363 p. (Doctor's thesis)
10. JOHNSON, CECILIA VALENTINE. *A Critical Analysis and Appraisal of Reading Readiness Materials for First Grade*. Austin: University of Texas, 1948. 147 p. (Master's thesis)
11. KEARNEY, NOLAN C. "An Analysis of the Vocabulary of First Grade Reading Material." *Journal of Educational Research* 43: 481-93; March 1950.
12. LAMPKIN, RICHARD HENRY. *Variability in Recognizing Scientific Inquiry*. New York: Teachers College, Columbia University, 1949. 79 p. (Doctor's thesis)
13. LEWRY, MARION E. "A Writing Vocabulary for Grade I." *Elementary School Journal* 48: 88-90; October 1947.
14. MALLINSON, GEORGE G.; STURM, HAROLD E.; and MALLINSON, LOIS M. "The Reading Difficulty of Textbooks in Junior High School Science." *School Review* 58: 536-40; December 1950.
15. MALLINSON, GEORGE G.; STURM, HAROLD E.; and PATTON, ROBERT E. "The Reading Difficulty of Textbooks in Elementary Science." *Elementary School Journal* 50: 460-63; April 1950.

16. MCAULAY, JOHN DAVID EWEN. *Trends in Elementary School Geography*. Stanford University, Calif.: Stanford University, 1948. 326 p. (Doctor's thesis)
17. MCCLURE, DOROTHY. "Social-Studies Textbooks and Atomic Energy." *School Review* 57: 540-46; December 1949.
18. READ, JOHN G. "Picture Indices for Basic Readers." *Elementary School Journal* 50: 339-40; February 1950.
19. RISINGER, HUBERT BAKER. *Consumer Information in Eighth Grade Mathematics*. New Brunswick, N. J.: Rutgers University, 1949. 161 p. (Doctor's thesis)
20. SIMON, RUTH. *The Semantic Demands of Primers in Relation to Success of Pupils*. Baltimore: Johns Hopkins University, 1948. 269 p. (Doctor's thesis)
21. STAPH, RACHEL EVELYN RUTH. *Selected Problems Regarding the Use of Encyclopedias in the Wooldridge School*. Austin: University of Texas, 1950. 80 p. (Master's thesis)

CHAPTER VI

Curriculum Development

GORDON N. MACKENZIE and CLIFFORD BEBELL

SEVERAL concepts relating to curriculum development which have influenced recent studies in this area are the following: (a) it should be continuous, (b) it should be brought about by the participation of all concerned, (c) it should be primarily concerned with changes in people, (d) it should be intimately related to classroom practices, (e) it should involve recognition that changes in relationships must precede changes in forms and structures. All these concepts emphasize the process by which change is brought about rather than specific changes in the curriculum.

The research studies themselves lead to two observations. First, there has been a decline in the number of controlled experimental studies. This is probably caused by lack of faith in the representativeness of laboratory situations, with a consequent doubt as to the validity of findings from such studies. Second, there has been a growing recognition of the complexity and ambiguous nature of research in a field where each situation can be thought of as both unique and in a constant state of flux. The difficulty in developing adequate research technics in this area probably is a partial factor in the publication of a large number of proposals based upon theoretical considerations rather than upon experimental evidence.

Such recent research as has been reported tends to be based increasingly in field situations and has been referred to as action research, teacher research, developmental research, or local experimentation. This type of research is conducted for the primary purpose of improving local practices, with little regard for possible generalizations. Thus, findings are more likely to be applied to the situation in which they were discovered; but the lack of generality makes their contribution to a body of knowledge difficult to assess. The aggregate of a number of similar findings from different studies ought to be of more than local significance. Caswell (12) pointed out the need for giving careful attention to this problem.

Some attempts have been made to increase the significance of studies of local practice thru a cooperative approach. One form of this is the school study council, covering a certain geographic area, such as the Metropolitan School Study Council, or the New England Development Council. These councils have emphasized the identification and dissemination of sound educational practices. They appear to have potentiality for fostering local experimentation on a scale which would increase the generality of findings. Another form of cooperative approach is that between university agencies and local school systems. Here, the emphasis has been upon the improve-

ment of local practices, but attempts have been made to identify and publicize those aspects of local studies which might have wider implications.

A major characteristic of research in curriculum change has been the focus on individuals involved in the process, namely, teachers, students, administrators, lay persons. Much attention has been paid to the ways in which attitudes are changed, and to the process by which a group of individuals acts together to achieve its goals.

The topics of "supervision" and "curriculum change" are combined for the first time in this issue of the REVIEW. This reflects the changing definitions of both to involve changes in people resulting from cooperative action. So far as supervision results in changes in values, understandings, skills and relationships, it leads to a changed curriculum. Similarly, curriculum improvement activities have an identical focus. Studies which deal with this concept of supervision, rather than the older notion of inspection and direct control, have often used other names for it, such as inservice education, or consultant service. Consequently the number of studies dealing with supervision as a topic is even smaller than would be accounted for by the short period of time since it was last reported in the October 1949, issue of the REVIEW.

Nature of Supervision and Curriculum Development

One analysis of the nature of curriculum development was made by Benne (6), who described curriculum change in its interrelationship with cultural change at two levels: (a) the reconstruction of the school as one of many social institutions; and (b) changes in the attitudes, habits, and skills of the students. He pointed out that some people desire to find direction for curriculum change outside of areas of current cultural struggle, while others feel that direction should come from within such controversial areas. Caswell (13) and Smith, Stanley, and Shores (66) have made more extensive analyses of the problems of curriculum improvement.

Factor (29) investigated the gap between theory and practice, and concluded that obstacles to curriculum change are set up by (a) value systems developed by individuals in their childhood, (b) the individual's need for security, (c) the authoritarian pattern in our culture, (d) the degree of spontaneity and creativity in the persons involved. She maintained that action research would help, and felt that appreciation of the worth of human beings and of their contributions was vital.

Curriculum change was thought of by Sharp (64) as being synonymous with teachers' personality development, and he pointed out the need for their "reeducation." Four processes making up this reeducation included: (a) establishing mature interpersonal relationships, (b) encouraging free expression of ideas, (c) developing insight into one's own problems, (d) testing this insight in real situations.

The Department of Curriculum and Teaching of Teachers College,

Columbia University (16) presented an analysis of many significant issues and problems in curriculum development. The underlying theme was that the most important goal of such change is the meeting of needs and interests of learners in their current social situations. Three prerequisites of a good curriculum were stated to be: (a) development of socially directed group power; (b) the joint effort of all concerned; (c) people who are willing and able to change their desires, beliefs, habits, and skills. Other analyses of the nature of curriculum development were presented by Kubie (45), as a psychiatrist, and Childs (15), as a student of public affairs.

Studies specifically directed to a consideration of the nature of supervision were rare. Harman (36) surveyed the concepts of supervision held by teachers and principals in 24 high schools, and found that a majority believed it should be cooperative, while fewer believed it should involve inservice training of teachers, or the evaluation and improvement of the school's instructional program. Oliver (55) discussed the problem of supervision in the small school and concluded that the concept of cooperative supervision was fundamental. Replogle (58) asked teachers to identify areas in which they wanted help, and listed a number which were reported.

Organization for Supervision and Curriculum Development

The question of the relationship between organization and process has not been clearly defined or carefully studied. Frazier (30) examined seven school situations of various types and concluded that organization varied considerably among them and stemmed from the needs of each situation. Thelen (67) analyzed organization in terms of group structure, and identified two types: free association groups, and groups organized about a problem. Smith, Stanley and Shores (66) suggested guides for organization.

A report on the organization of various curriculum programs across the country was made by the Association for Supervision and Curriculum Development (2). Caswell (13) presented nine detailed reports on current city, county, and state curriculum programs. Toulouse (68) surveyed state and city systems and found that in most there were one or more workers with responsibility for curriculum development, altho in the cities these were usually part-time workers. He found great variation in types of city organizations for curriculum improvement. Everett (28) surveyed 83 cities, and found that the central office frequently served in an inspectional as well as in a consultant capacity. He reported little use of the individual school as an organizing unit.

Chiara (14) made an analysis of the state curriculum improvement programs, and reported a trend toward dynamic state leadership. Woods (74) made a thoro study of effects of Missouri's secondary-school curriculum program over a 10-year period. Hand (35) and Sanford (62) re-

ported on Illinois' secondary-school study. The organization of supervisory services in California was studied by Lonsdale (48). McFaddin (49) traced the development of state-authorized supervision of rural elementary white schools in Alabama, and identified many handicaps to good supervision, including political pressures, the burden of duties not of a supervisory nature, and insufficient status for supervisors.

As mentioned before, a major trend has been toward increased use of cooperatively organized curriculum studies. The Horace Mann-Lincoln Institute of School Experimentation (42) and the Metropolitan School Study Council (51) both issued reports. In addition, Romney (60) indicated the development of similar organizations in various parts of the country. Evans (27) edited an account of a cooperative study made by Battle Creek Teachers and the Horace Mann-Lincoln Institute, while Zimmerman and Herrick (76) described quite fully a two-year cooperative child-study plan. In contrast with much of the emphasis on the efforts of local groups to improve the curriculum, Briggs (9) proposed a unified national effort including a curriculum research laboratory.

Herrick (38) presented the conceptual orientation of a cooperative study and listed the responsibilities which should be borne by the participating university staff. In another report (39), he contrasted the cooperative study with the survey, and concluded that while a community may get short-term security from the latter, it will get inservice education from the former. Edgar (25) also concluded that a cooperative survey has a contribution to make where changes in attitudes, concepts, and skills of operation are desired.

The question of organization within a single school received attention. Cragwell (22), Parody (57), Roussert (61), and Wise (72) all made studies of the development of a program or curriculum within a single school. In each situation strengths and weaknesses were weighed, and conclusions were drawn which were generally favorable both to the process employed and to the program developed.

Action Research

Emphasis upon action research has already been pointed out as one of the major characteristics of current research in curriculum development. Bristow (10), Caswell (12), and Factor (29) all emphasized the promise of this approach. Corey (18) undertook to make an analysis of the difference between fundamental and action research. He considered action research to be (a) directed to the improvement of practices in a specific situation, (b) carried out by persons who are participants in that situation, (c) possessed of a flexible design, (d) intended to result in action. Fundamental research he found to be (a) directed to the establishment of new generalizations, (b) conducted by nonparticipants, (c) possessed of an inviolable design, (d) expected to result in improvements in educational practices only as a result of the natural course of events. In other articles

(19, 20) he discussed characteristics and principles of action research, and the conditions conducive to curriculum experimentation.

A study group of the Horace Mann-Lincoln School (43) made recommendations for the carrying out of group research by teachers, in which they identified characteristics of such work. In particular, they suggested that the study of many interrelated factors in one situation might well be as meaningful as the study of one factor in many situations. Wann (70) reported on the role of teachers in action research in the Springfield, Missouri, schools. Wrightstone (75) proposed action-research programs for research bureaus.

Group Procedures

Group procedures constituted a part of almost every discussion and study of curriculum change. In fact, the emphasis upon this matter has been so great as to suggest that preoccupation with it may be limiting study in other directions. Of course, many studies have been made of group process in other areas than that of curriculum development, and these have been reported on in other issues of the REVIEW. In the last three-year cycle, material dealing with some aspect of this topic has been included in the issues of April, June, and December 1948; June, October, and December 1950.

Studies directly relating group process to curriculum change were not plentiful. Benne and Muntyan (7) compiled an extensive set of readings designed to relate these two topics. The Association for Supervision and Curriculum Development (3) published an extensive discussion of the use of group processes in supervision. Anderson and his associates (1) analyzed the process by which a staff might select a problem for group work. Lawler (46) described certain phases of problem definition. Witt (73) analyzed obstacles to effective communication and proposed correctives.

Practices and Procedures for Supervision and Curriculum Development

Many studies have been made with regard to various devices suggested and used for facilitating curriculum change and improving participation in such change, but few have been accompanied by supportive evidence. The Metropolitan School Study Council (52) identified five patterns of public participation in curriculum change. Frazier (30) reported the practices which seven different school situations had in common in working on curriculum change. *Educational Leadership* (26) presented questionnaire responses from 22 individuals with responsibility for instructional improvement, with regard to successful procedures.

Curriculum implications of the armed forces educational programs were studied by Goodman (32), who found that effectiveness of curriculum work was increased by close liaison between the curriculum workers and

those familiar with the situations for which the learners were training. He suggested that schools invite interested persons to participate in developing the curriculum. Friedman (31) found that parents felt that many topics stressed by the school were not important, and suggested that schools try to discover what the needs of pupils and adults really are. Hoppe (41) analyzed the nature of student participation in over 100 schools replying on a questionnaire. Cooper (17) suggested ways in which a college faculty might start thinking about and building toward a general education program. Bishop (8) reported on Northwest Missouri State College's experience in the formulation of objectives. Romine (59) proposed that the development of educational objectives start with the teacher and his work rather than with a philosophy of education.

A number of specific technics were examined. Eckhardt (24) analyzed the specific activities of a number of principals with regard to the curriculum. The work of the consultant was reported on by Lawler (47). The committee method was stated by Goodman (32) to be invaluable to the Navy in giving direction, but so cumbersome and slow in operation that they came increasingly to rely on specialists. Unruh (69) surveyed state leadership practices in respect to junior college curriculum development. The First Assistants Association of New York City School System (53) questioned teachers and principals regarding classroom visitation by departmental chairmen. They found four out of five teachers had faith in this technic, altho informal conferences and talks rated higher. Principals, too, thought that reports of class visits, plus conferences, helped significantly to improve teaching. Greene and Woodruff (33) reported on the use of standardized tests by teachers, followed by remedial work, and thought that this made optimum use of supervisors' skills. White (71) suggested that the device of having teachers rate their administrators would, if agreed to willingly by the administrators, help improve supervision.

Reports were made of a great many specific instances of the use of various technics and procedures, but with little attempt to do more than describe and evaluate them informally. Drag (23) presented descriptions of curriculum laboratories in the United States. Herrick and others (40) reported a preschool planning conference; Haskew (37) defined the educational clinic. Workshops, curriculum councils, and many other technics and procedures were reported on in this fashion. Grim (34) reported a number of studies and different approaches to curriculum development. Barton (5) analyzed several definitions of educational objectives on the basis of sources, the process of defining, and means of clarifying. There seems to be great need, however, for carefully considered attempts to study and appraise specific devices. Four such studies were made: Olson (56), on local planning conferences; Meier (50), on the work-group-conference method; Corey and Halverson (21) reported on the use of sociometric analyses to improve workshops; Selmeier (63), on the work of national committees over a 50-year period.

Trends and Needed Research

Shores (65) reviewed the research on elementary-school curriculum organization for the period, 1890-1949, and identified such trends as: (a) curriculum revision coming to be thought of as continuous, (b) state legislatures assuming an increasing role in determining the objectives and organization of the curriculum, (c) curriculum workers increasingly concerned with translating democratic living into specific goals and objectives, (d) more time being devoted to problems of social living. Bacon (4) and Newsom (54) also studied trends in curriculum planning, and corroborated most of the above. Burt (11) investigated the origin and development of supervision in institutions of higher learning, in terms of the frequency of its mention in various publications. He found that attention to this topic increased until the early 30's and declined thereafter. Jobe (44) traced the history of curriculum development in Mississippi public white high schools.

Zirbes (77) called attention to gaps in curriculum research, and pointed out the need to examine the following: (a) implications of social change and fundamental research for the curriculum, (b) assumptions currently being made concerning the curriculum implications of motives and attitudes, (c) unstated assumptions underlying certain widespread curriculum practices and materials, (d) resistance to educational advance, (e) clarification of terms used for changing concepts and connotations. Questions on which research is much needed were listed by Benne (6), as follows: (a) How should direction for curriculum change be found? (b) Should this change be periodic or continuous? (c) What experts does a school system need? (d) What is the responsibility of colleges? of government? (e) What is needed in the way of competency in human relations? (f) What is the interrelationship between curriculum research and curriculum development? This last question was also discussed by Bristow (10), who stated that attention in research should be directed to: (a) speed-up of educational lag; (b) design of the curriculum; (c) participation of school personnel; (d) agreement among educational institutions, agencies, and schools about curriculum problems; (e) evaluation; (f) place of research in curriculum programs; (g) pooling of know-how on developmental, or action research; (h) design of experiments. Factor (29) indicated three important jobs: development of new measuring tools to get evidence on school success; better communication of research results to the public; research into organized obstruction to change.

Caswell (12) pointed out the falling off of the amount of curriculum research in the last 20 years, and the need for reversing this trend. He found action research to be an encouraging development, provided that careful attention is given to the matter of generalization. Limitations in curriculum research were identified to be: (a) inadequate personnel, (b) too few funds, (c) reluctance of school systems to share responsibility for curriculum development with universities, (d) difficulty in implementation of results.

Certain research needs might be added to those listed above, or might be reemphasized as particularly pressing areas for study: (a) increasing the generality of action research, (b) applying experimental findings in group process from other fields to that of curriculum change, (c) relating process to organization in curriculum change, (d) developing a methodology of cooperative research, (e) relating evaluation to curriculum improvement, (f) studying curriculum development at the college and adult levels.

Bibliography

1. ANDERSON, ROBERT H., and OTHERS "The Selection of the Problem for Staff Work." *Educational Administration and Supervision* 33: 339-48; October 1947.
2. ASSOCIATION FOR SUPERVISION AND CURRICULUM DEVELOPMENT. *Building Public Confidence in the Schools*. Washington, D. C.: the Association, 1949. 60 p.
3. ASSOCIATION FOR SUPERVISION AND CURRICULUM DEVELOPMENT. *Group Processes in Supervision*. Washington, D. C.: the Association, 1948. 130 p.
4. BACON, FRANCIS L. "Curriculum Planning in America." *Bulletin of the National Association of Secondary-School Principals* 31: 63-68; October 1947.
5. BARTON, GEORGE E., JR. "The Derivation and Clarification of Objectives." *Journal of Educational Research* 41: 624-39; April 1948.
6. BENNE, KENNETH D. "An Approach to Issues Underlying Curriculum Development." *Journal of Educational Research* 41: 561-76; April 1948.
7. BENNE, KENNETH D., and MUNTYAN, BOZIDAR. *Human Relations in Curriculum Change*. Circular Series A, No. 51, Illinois Secondary School Curriculum Program, Bulletin No. 7. Springfield, Ill.: Office of the State Superintendent of Public Instruction, 1949. 316 p.
8. BISHOP, CLIFFORD L. "A College Cooperates in Formulating Its Objectives." *Educational Administration and Supervision* 36: 45-53; January 1950.
9. BRIGGS, THOMAS H. "Eventually—Why Not Now?" *Bulletin of the National Association of Secondary-School Principals* 34: 195-207; April 1950.
10. BRISTOW, WILLIAM H. "The Place of Research in Curriculum Development." *Improving Educational Research*. Official Report of 1948 Meeting. Washington, D. C.: American Educational Research Association, a department of the National Education Association, 1948. p. 145-48.
11. BURT, ALLAN. "Supervision of Instruction." *Peabody Journal of Education* 25: 208-17; March 1948.
12. CASWELL, HOLLIS L. "Research in the Curriculum." *Educational Leadership* 7: 438-45; April 1950.
13. CASWELL, HOLLIS L., and OTHERS. *Curriculum Improvement in Public School Systems*. New York: Teachers College, Columbia University, 1950. 462 p.
14. CHIARA, CLARA R. *A Critical Study of the Secondary School Curriculum Development Programs of the State Departments of Education*. Columbus: Ohio State University, 1948. 465 p. (Doctor's thesis)
15. CHILDS, JOHN L. "A Student of Public Affairs Views the Problem of Curriculum Development." *Teachers College Record* 50: 232-40; January 1949.
16. BRUNSTETTER, MAX R., editor. "Toward Curriculum Improvement." *Teachers Record* 50: 289-369; February 1949.
17. COOPER, RUSSELL N. "Faculty Adventures in Educational Planning." *Journal of General Education* 2: 35-40; October 1947.
18. COREY, STEPHEN M. "Action Research, Fundamental Research, and Educational Practice." *Growing Points in Educational Research*. Official Report of 1949 Meeting. Washington, D. C.: American Educational Research Association, a department of the National Education Association, 1949. p. 261-65.
19. COREY, STEPHEN M. "Conditions Conducive to Curricular Experimentation." *Educational Administration and Supervision* 36: 209-16; April 1950.
20. COREY, STEPHEN M. "Curriculum Development through Action Research." *Educational Leadership* 7: 147-53; December 1949.

21. COREY, STEPHEN M., and HALVERSON, PAUL M. "Some Inter-Personal Relations in a Curriculum Work Conference." *Teachers College Record* 52: 98-106; November 1950.
22. CRAGWELL, SARAH E. *A Plan for Cooperative Action by Home Economics Staff and Students at Winthrop College to Evolve a Functional Departmental Program for the First Two Years*. New York: Teachers College, Columbia University, 1949. 124 p. (Doctor's thesis)
23. DRAG, FRANCIS L. *Curriculum Laboratories in the United States*. Education Monograph, No. 15. San Diego: Curriculum Laboratory, Office of the Superintendent of Schools, San Diego County, 1947. 172 p.
24. ECKHARDT, JOHN W. *A Study of the High School Principalship in Its Relation to Curriculum Development*. Los Angeles: University of Southern California, 1946. 292 p. (Doctor's thesis)
25. EDGAR, ROBERT WILSON. *A Study of the Techniques and Procedures for Curriculum Improvement in the Great Neck Cooperative Survey*. New York: Teachers College, Columbia University, 1949. 230 p. (Doctor's thesis)
26. EDUCATIONAL LEADERSHIP. "Some Hints to Leadership Needs." *Educational Leadership* 6: 135-43; December 1948.
27. EVANS, HUBERT, editor. "Cooperative Research and Curriculum Improvement." *Teachers College Record* 51: 407-74; April 1950.
28. EVERETT, J. BERNARD. *The Administration of Curriculum Programs in Selected City School Systems*. New York: Teachers College, Columbia University, 1949. 168 p. (Doctor's thesis)
29. FACTOR, BERNICE. "Curriculum Change in Relation to Certain Psychological and Cultural Factors." *Harvard Educational Review* 19: 219-30; Fall 1949.
30. FRAZIER, ALEXANDER, editor. "Organization Stems from the Situation." *Educational Leadership* 6: 441-48, 470; 1949.
31. FRIEDMAN, KOPPLE C. "Utilizing the Community in Curriculum Development." *School Review* 56: 357-60; June 1948.
32. GOODMAN, SAMUEL M. *Curriculum Implications of Armed Services Educational Programs*. Washington, D. C.: American Council on Education, 1947. 101 p.
33. GREENE, JAMES E., and WOODRUFF, WILDA. "A Testing Program for Promoting Improved Supervision." *Growing Points in Educational Research*, Official Report of 1949 Meeting. Washington, D. C.: American Educational Research Association, a department of the National Education Association, 1949. p. 155-58.
34. GRIM, PAUL R. "Designs for Curriculum Development." *Journal of Educational Research* 42: 18-29; September 1948.
35. HAND, HAROLD C. *Principal Findings of the 1947-1948 Basic Studies of the Illinois Secondary School Curriculum Program*. Circular Series A, No. 51, Illinois Secondary School Curriculum Program, Bulletin No. 2. Springfield, Ill.: Office of the State Superintendent of Public Instruction, 1949. 78 p.
36. HARMAN, ALLEN C. *Supervision in Selected Secondary Schools*. Philadelphia: University of Pennsylvania, 1947. 181 p.
37. HASKEW, LAURENCE D. *The Educational Clinic*. Washington: American Council on Education, 1949. 51 p.
38. HERRICK, VIRGIL E. "Conceptual Orientation of a Co-operative Study." *Elementary School Journal* 49: 330-40; February 1949.
39. HERRICK, VIRGIL E. "The Survey Versus the Cooperative Study." *Educational Administration and Supervision* 34: 449-58; December 1948.
40. HERRICK, VIRGIL E.; JOHNSTON, A. M.; and PEASE, JAMES E. "What Makes a Good Preschool Planning Conference?" *Elementary School Journal* 49: 438-45; April 1949.
41. HOPPE, ARTHUR A. *Student Participation in Curriculum Improvement*. New York: Teachers College, Columbia University, 1947. 156 p. (Doctor's thesis)
42. HORACE MANN-LINCOLN INSTITUTE OF SCHOOL EXPERIMENTATION. "A Progress Report." *Teachers College Record* 49: 305-62; February 1948.
43. HORACE MANN-LINCOLN STUDY GROUP. "Recommended: Group Research for Teachers." *Teachers College Record* 50: 108-13; November 1948.
44. JOBE, EUCLID R. *Curriculum Development in Mississippi Public White High Schools, 1900-1945*. Nashville, Tenn.: George Peabody College for Teachers, 1950. 199 p. (Doctor's thesis)
45. KUBIE, LAWRENCE S. "The Psychiatrist Considers Curriculum Development." *Teachers College Record* 50: 241-46; January 1949.

46. LAWLER, MARCELLA R. "Important Phases of Problem Definition in Curriculum Improvement." *Teachers College Record* 51: 537-43; May 1950.
47. LAWLER, MARCELLA R. *The Work of the Consultant*. New York: Teachers College, Columbia University, 1949. 187 p. (Doctor's thesis)
48. LONSDALE, BERNARD J. *General Supervision of Instruction and Curriculum in the Public Elementary School Systems of California*. Berkeley: University of California, 1950. 289 p. (Doctor's thesis)
49. MCFADDIN, GENORA. *The Development of State-Authorized Supervision of Rural Elementary White Schools in Alabama*. Contribution to Education, No. 409. Nashville, Tenn.: George Peabody College for Teachers, 1949. 228 p.
50. MEIER, ARNOLD R. *A Study of a Work-Group-Conference Method for Producing Curriculum Change*. Detroit: Wayne University, 1949. 279 p. (Doctor's thesis)
51. METROPOLITAN SCHOOL STUDY COUNCIL. "A Progress Report." *Teachers College Record* 50:1-59; October 1948.
52. METROPOLITAN SCHOOL STUDY COUNCIL, SUBCOMMITTEE OF THE COMMITTEE ON LAY UNDERSTANDING. *Public Action for Powerful Schools*. Metropolitan School Study Council Research Studies, No. 3. New York: Teachers College, Columbia University, 1949. 85 p.
53. NEW YORK CITY PUBLIC SCHOOLS, FIRST ASSISTANTS ASSOCIATION, COMMITTEE ON PROBLEMS OF SUPERVISION. "A Study of Chairman's Reports on Class Visits." *High Points* 30: 33-51; February 1948.
54. NEWSOM, NATHAN W. "Recent Trends in Curriculum Building in the Secondary School." *Bulletin of the National Association of Secondary-School Principals* 32: 116-23; November 1948.
55. OLIVER, A. I. *The Curriculum of the Small High School*. Boulder: University of Colorado, 1948. 381 p. (Doctor's thesis)
56. OLSON, MYRON S. *Local Planning Conferences in North Central Association High Schools*. Iowa City: State University of Iowa, 1950. 307 p. (Doctor's thesis)
57. PARODY, OVID FRANK. *The Process of Initiating and Developing a New Curriculum at the Drum Hill Junior High School, Peekskill, New York*. New York: Teachers College, Columbia University, 1948. 85 p. (Doctor's thesis)
58. REPLOGLE, VERNON L. "What Help Do Teachers Want?" *Educational Leadership* 7: 445-49; April 1950.
59. ROMINE, STEPHEN A. "A Dual Approach to the Development of Educational Objectives." *Educational Administration and Supervision* 34: 459-67; December 1948.
60. ROMNEY, MILES C. "The Metropolitan Cooperative School Study Movement." *Improving Educational Research*. Official Report of 1948 Meeting. Washington, D. C.: American Educational Research Association, a department of the National Education Association, 1948. p. 125-29.
61. ROUSSERT, SISTER MARY BERNICE. *Initiation of a Core Curriculum, St. Vincent High School, Akron, Ohio*. New York: Teachers College, Columbia University, 1949. 177 p. (Doctor's thesis)
62. SANFORD, CHARLES W. "Challenging Developments in the Illinois Secondary School Curriculum Program." *Bulletin of the National Association of Secondary-School Principals* 33: 57-65; April 1949.
63. SELMEIER, HENRY L. *Curriculum Construction by National Committees, 1880-1930*. New Haven, Conn.: Yale University, 1948. 515 p. (Doctor's thesis)
64. SHARP, GEORGE M. *Curriculum Development as Reeducation*. New York: Teachers College, Columbia University, 1949. 161 p. (Doctor's thesis)
65. SHORES, JAMES HARLAN. *A Critical Review of the Research on Elementary School Curriculum Organization, 1890-1949*. University of Illinois Bulletin, Vol. 47, No. 8. Urbana, Ill.: the University, 1949. 29 p.
66. SMITH, B. OTHANEL; STANLEY, WILLIAM O.; and SHORES, J. HARLAN. *Fundamentals of Curriculum Development*. New York: World Book Company, 1950. Part V, p. 620-723.
67. THELEN, HERBERT A. "Engineering Research in Curriculum Building." *Journal of Educational Research* 41: 577-96; April 1948.
68. TOULOUSE, ROBERT B. *An Analysis of the Secondary School Curriculum Improvement Policies and Practices of States and Cities*. Columbia: University of Missouri, 1948. 323 p. (Doctor's thesis)
69. UNRUH, ADOLPH. "State Leadership in Junior College Curriculum Development." *School Review* 58: 475-78; November 1950.

70. WANN, KENNETH D. *Teacher Participation in Action Research Directed Toward Curriculum Change*. New York: Teachers College, Columbia University, 1950. 240 p. (Doctor's thesis)
71. WHITE, KENNETH B. "The Improvement of Educational Administration and Supervision." *Educational Administration and Supervision* 35: 181-84; March 1949.
72. WISE, WILLIAM MAX. *Developing a Guidance Program Through Social Process*. New York: Teachers College, Columbia University, 1948. 139 p. (Doctor's thesis)
73. WITT, PAUL. "Effective Communication in Curriculum Development." *Teachers College Record* 51: 286-95; February 1950.
74. WOODS, BOB G. *Certain Effects of Missouri's Secondary School Curriculum Development Program, 1938-1949*. Iowa City: State University of Iowa, 1950. 316 p. (Doctor's thesis)
75. WRIGHTSTONE, JACOB WAYNE. "Research-Action Program for Research Bureaus." *Improving Educational Research*. Official Report of 1948 Meeting. Washington, D. C.: American Educational Research Association, a department of the National Education Association, 1948. p. 29-34.
76. ZIMMERMAN, ELIZABETH, and HERRICK, VIRGIL E. "A Child Study Program: One Phase of a Cooperative Study." *Educational Administration and Supervision* 35: 193-205; April 1949.
77. ZIRBES, LAURA. "Gaps in Curriculum Research." *Educational Leadership* 7: 187-92; December 1949.

SUPPLEMENTARY DIRECTORY

(The latest complete membership list was published in the December 1950 issue of the REVIEW. The following list indicates new members since that date.)

ACTIVE MEMBERS

- * **Blackwell, Sara E.**, Assistant Professor, Home Economics Education Department, Cornell University, Ithaca, New York.
- Bou, Ismael Rodriguez**, Professor of Psychology, University of Puerto Rico, Rio Piedras, Puerto Rico.
- Burnham, Paul S.**, Assistant Professor of Psychology, Yale University, New Haven, Connecticut.
- Carroll, John B.**, Assistant Professor of Education, Graduate School of Education, Harvard University, Cambridge 38, Massachusetts.
- Cason, Eloise B.**, Director of Child Guidance, Bloomfield Public Schools, Bloomfield, New Jersey.
- Cheyney, W. Walker**, Director, Division of Educational Research, Board of Public Education, Philadelphia 3, Pennsylvania.
- Coleman, Gerald Max**, Director, Instruction and Research, St. Joseph Public Schools, St. Joseph, Missouri.
- Crossley, B. Alice**, Assistant Professor, School of Education, Boston University, Boston, Massachusetts.
- Cynamon, Manuel**, Assistant Director, Office of Evaluation and Educational Research, Brooklyn College, Brooklyn 10, New York.
- Dahnke, Harold L., Jr.**, Assistant Professor, Board of Examiners, Michigan State College, East Lansing, Michigan.
- Ford, Roxana Ruth**, Associate Professor, Home Economics Education, University of Minnesota, St. Paul 1, Minnesota.
- Gardner, Eric F.**, Associate Professor of Educational Statistics, School of Education, Syracuse University, Syracuse, New York.
- Gregg, George W.**, Educational Consultant (Evaluation), Air University, Maxwell Air Force Base, Alabama.
- Grim, Paul R.**, Chairman, Department of Theory and Practice of Teaching and Director of Laboratory Experiences, College of Education, University of Minnesota, Minneapolis 14, Minnesota.
- Harris, Albert J.**, Director of Educational Clinic and Associate Professor of Education, Queens College, Flushing, New York.
- Hunt, Jacob T.**, Assistant Professor of Education and Head, Junior-Senior Division of Reading Improvement Service, Western Reserve University, Cleveland, Ohio.
- Johns, Roe L.**, Professor, School Administration, University of Florida, Gainesville, Florida.
- Johnson, A. Pemberton**, Project Director, Educational Testing Service, 20 Nassau Street, Princeton, New Jersey.
- Kozelka, Paul**, Associate Professor of Speech, Teachers College, Columbia University, New York 27, New York.
- Lambert, Sam M.**, Assistant Director, Research Division, National Education Association, 1201 Sixteenth Street, N.W., Washington 6, D. C.
- Lazar, Nathan**, Associate Professor of Mathematical Education, Ohio State University, Columbus 10, Ohio.
- Lee, J. Murray**, Dean, School of Education, State College of Washington, Pullman, Washington.
- Lewerenz, Alfred Speir**, Head Supervisor, Evaluation Section, Los Angeles City Schools, Los Angeles 15, California.
- Luther, Mrs. Gertrude Hawkins**, Bureau of Educational Research, Board of Education, Cleveland, Ohio.
- McClelland, James N.**, Instructor, School of Medicine, University of California, San Francisco 16, California.
- McConagha, Glenn Lowery**, Director, United States Armed Forces Institute, 102 North Hamilton Street, Madison 3, Wisconsin.

* Changed from associate to active member in 1951.

- McLaughlin, Kenneth F.**, Assistant Professor, Department of Mathematics, U. S. Naval Academy, Annapolis, Maryland.
- Mallinson, George Greisen**, Professor of Psychology and Education, Western Michigan College of Education, Kalamazoo, Michigan.
- Ohlsen, Merle M.**, Associate Professor of Education, College of Education, University of Illinois, Champaign, Illinois.
- Phipps, George C.**, Principal, J. N. Thorp School, Chicago, Illinois.
- Pond, Frederick L.**, Supervising Curriculum Consultant, Department of Public Instruction, Education Building, Harrisburg, Pennsylvania.
- Powell, Jackson O.**, Dean, School of Education, University of Wichita, Wichita, Kansas.
- * **Prescott, George A.**, Test Editor, World Book Company, Yonkers 5, New York.
- Pugmire, D. Ross**, Professor of Education, University of Oklahoma, Norman, Oklahoma.
- Reiner, William B.**, Research Assistant, Bureau of Educational Research, Board of Education of the City of New York, 110 Livingston Street, Brooklyn 2, New York.
- Rhum, Gordon J.**, Assistant Professor of Education, Iowa State Teachers College, Cedar Falls, Iowa.
- Rummel, J. Francis**, Assistant Professor of Education, University of Oregon, Eugene, Oregon.
- Ryan, W. Carson**, Kenan Professor of Education, University of North Carolina, Chapel Hill, North Carolina.
- See, Harold W.**, Assistant Professor of Education, Teachers College, University of Cincinnati, Cincinnati, Ohio.
- * **Shane, Harold G.**, Professor of Education, School of Education, Northwestern University, Evanston, Illinois.
- Shevenell, Rev. Raymond H.**, O.M.I. Director, Institute of Psychology, University of Ottawa, Ontario, Canada.
- Stewart, Lawrence H.**, Assistant Professor of Educational Psychology, George Peabody College for Teachers, Nashville, Tennessee.
- Stewart, Robert C.**, Director of Research and Publications, State Department of Public Instruction, Dover, Delaware.
- Stone, Marguerite M.**, Director of Research, Montgomery County Board of Education, Rockville, Maryland.
- Tyler, Louise L.**, Teacher and Chairman, Committee on Institutional Research, Chicago Teachers College, 6800 South Stewart Avenue, Chicago, Illinois.
- Van Auken, Robert A.**, Director of Research, Schenectady Public Schools, Schenectady, New York.
- Vredevoe, Lawrence E.**, Director, Bureau of School Services and Associate Professor of Education, University of Michigan, Ann Arbor, Michigan.
- Walker, George H., Jr.**, Acting Chairman, English Department and Director of Reading Program, Southern University, Baton Rouge, Louisiana.
- Washton, Nathan S.**, Assistant Professor, Department of Education, Queens College, Flushing, New York.
- Weaver, Edward K.**, Chairman, Division of Education, Bishop College, Marshall, Texas.
- Winans, S. David**, Supervisor of Research, New Jersey Department of Education, 175 West State Street, Trenton 8, New Jersey.
- Yeomans, Alice V.**, American Council on Education, 1785 Massachusetts Avenue, N.W., Washington, D. C.

* Changed from associate to active member in 1951.

ASSOCIATE MEMBERS

- Bebell, Clifford F. S.**, Research Assistant, The City College, New York, New York.
Bonney, Linwood K., Guidance Director, Roger Ludlowe High School, Fairfield, Connecticut.
Clark, Rodney A., Director of Guidance, Webster High School, Webster, Texas.
Cosman, Charles B., Supervising Principal, Islip High School, Islip, New York.
Curry, Guy A., Jr., Coordinator of Teacher Education and Certification, Oklahoma State Department of Education, Oklahoma City, Oklahoma.
Davis, Warren M., Director of High Schools, Alliance Public Schools, Alliance, Ohio.
Dowdell, Susan, Elementary Supervisor, Hillsborough County Schools, Tampa, Florida.
Fields, Ralph R., Director of Division of Instruction and Professor of Education, Teachers College, Columbia University, New York 27, New York.
Gardner, Rev. Laurence R., Superintendent of Parochial Schools, Manchester, New Hampshire.
Hamilton, Jean F., Assistant Professor of Education, College of Education, Butler University, Indianapolis 7, Indiana.
Hoover, Cecile Annette, Assistant Professor, Foods and Nutrition, Tuskegee Institute, Alabama.
Jones, George Julius, Assistant Professor of Education, Agricultural, Mechanical and Normal College, Pine Bluff, Arkansas.
Judy, Jack, Graduate Student, Teachers College, Columbia University, New York 27, New York.
Langbell, D. P., Superintendent of Public Schools, Kalispell, Montana.
Lee, Thomas L., Director, Curriculum and Publications, Fort Smith Public Schools, Fort Smith, Arkansas.
Martin, John Henry, Principal, Kingston High School, Kingston, New York.
Mitchell, Mrs. Helen deRamus, Public Health Educator, New York City Department of Health, New York, New York.
Moore, E. Carleton, Audio Visual Director and Curriculum Coordinator, Hempstead Public Schools, Hempstead, New York.
Pratt, Olga L., Director, Bartram School, Jacksonville 7, Florida.
Robinson, Gilbert L., Principal, Taft Junior High School, Oklahoma City 7, Oklahoma.
Robinson, Robert B. (Retired), 4243 Garfield Avenue, Kansas City 4, Missouri.
Silverman, Harold, Graduate Student, Washington University, St. Louis 1, Missouri.
Sizer, Woodrow J., Supervising Principal, Wabeno Joint School District No. 1, Wabeno, Wisconsin.
Sobesky, William R., Assistant Principal, Junior High School, Barbour Intermediate School, Detroit 4, Michigan.
Tolbert, Elias L., Graduate Student, Columbia University, New York 27, New York.
Walther, Herbert K., Chairman, Department of Education, University of Denver, Denver, Colorado.
Young, R. C., Principal, Woodrow Wilson Junior High School, Decatur, Illinois.

LIST OF ACTIVE MEMBERS BY STATES

Alabama

Gregg, George W.

CaliforniaLewerenz, Alfred Speir
McClelland, James N.**Canada**

Shevenell, Rev. Raymond H.

Connecticut

Burnham, Paul S.

Delaware

Stewart, Robert C.

District of ColumbiaLambert, Sam M.
Yeomans, Alice V.**Florida**

Johns, Roe L.

IllinoisOhlsen, Merle M.
Phipps, George C.
Shane, Harold G.
Tyler, Louise L.**Iowa**

Rhum, Gordon J.

Kansas

Powell, Jackson O.

Louisiana

Walker, George H., Jr.

MarylandMcLaughlin, Kenneth F.
Stone, Marguerite M.**Massachusetts**Carroll, John B.
Crossley, B. Alice**Michigan**Dahnke, Harold L., Jr.
Mallinson, George Greisen
Vredevoe, Lawrence E.**Minnesota**Ford, Roxana Ruth
Grim, Paul R.**Missouri**

Coleman, Gerald Max

New JerseyCason, Eloise B.
Johnson, A. Pemberton
Winans, S. David**New York**Blackwell, Sara E.
Cynamon, Manuel
Gardner, Eric F.
Harris, Albert J.
Kozelka, Paul
Prescott, George A.
Reiner, William B.
Van Auken, Robert A.
Washton, Nathan S.**North Carolina**

Ryan, W. Carson

OhioHunt, Jacob T.
Lazar, Nathan
Luther, Mrs. Gertrude
Hawkins
See, Harold W.**Oklahoma**

Pugmire, D. Ross

Oregon

Rummel, J. Francis

PennsylvaniaCheyney, W. Walker
Pond, Frederick L.**Tennessee**

Stewart, Lawrence H.

Texas

Weaver, Edward K.

Washington

Lee, J. Murray

Wisconsin

McConagha, Glenn Lowery

Puerto Rico

Bou, Ismael Rodriguez

LIST OF ASSOCIATE MEMBERS BY STATES

Alabama
Hoover, Cecile Annette

Arkansas
Jones, George Julius
Lee, Thomas L.

Connecticut
Bonney, Linwood K.

Colorado
Walther, Herbert K.

Florida
Dowdell, Susan
Pratt, Olga L.

Illinois
Young, R. C.

Indiana
Hamilton, Jean F.

Michigan
Sobesky, William R.

Missouri
Robinson, Robert B.
Silverman, Harold

Montana
Langbell, D. P.

New Hampshire
Gardner, Rev. Laurence R.

New York
Bebell, Clifford F. S.
Cosman, Charles B.
Fields, Ralph R.

Judy, Jack
Martin, John Henry
Mitchell, Mrs. Helen
deRamus
Moore, E. Carleton
Tolbert, Elias L.

Oklahoma
Curry, Guy A., Jr.
Robinson, Gilbert L.

Ohio
Davis, Warren M.

Texas
Clark, Rodney A.

Wisconsin
Sizer, Woodrow J.

Index to Volume XXI, No. 3

Page citations are made to single pages; these are often the beginning of a chapter, section or running discussion dealing with the topic.

- Action research, 230
- Atomic energy, 204, 209; treatment in texts, 222
- Audio-visual aids, 214; effectiveness, 215; evaluation, 214
- Camping, 198
- Citizenship education, 203
- Community participation in curriculum planning, 173, 177
- Core curriculum, 200
- Curriculum, 196, 227; content, 191; development, 199, 227; elementary education, 190, 196; factors influencing, 190; higher education, 202; legal controls, 181; needed research, 233; objectives and goals, 179; organization, 196; planning, 177, 182; research, 227; secondary education, 190, 198; trends, 196, 198, 233; values, 175
- Driver education, 199
- Educational psychology, 186; in teacher training, 191; texts, 190
- Educational sociology, 182
- Encyclopedias, 220
- Exceptional children, 203; learning, 189; methods of teaching, 211
- Factors influencing curriculum, 174; economic, 174; nationally organized groups, 175; sociological and social, 174
- Family life education, 182
- Films, use of, 224
- General education, 180, 202
- Group methods, 192, 213, 231
- Health education, 199
- Human relations, teaching of, 204
- Learning, 186; and the curriculum, 186, 188; exceptional children, 189; theory, 188
- Learning materials, 220; content, 221; readability and difficulty of, 220
- Legal control of education, 181
- Libraries, curriculum, 213
- Life adjustment education, 202
- Mental hygiene and guidance, 188
- Methods of teaching, 211; arithmetic, 191, 212; exceptional children, 211; films on, 214; geometry, 191, 213; language skills, 212; reading, 213
- Needed research, curriculum, 233; learning materials, 225
- Objectives and goals of the curriculum, 173, 179, 186
- Organization of the curriculum, 196
- Philosophy, 173
- Radio, 214
- Recordings, 214
- Religious education, 176, 197; church and state, 177; place in secular education, 176
- Research, hypotheses for, 186; responsibility for, 182
- Resource units, 209
- Social learning, 191
- Student participation in curriculum planning, 182
- Supervision and curriculum development, 228; nature of, 228; organization for, 229; practices and procedures, 231; technics, 231
- Teaching materials, 209; evaluation of, 182, 210; for visually handicapped, 213; sources of, 210, 214
- Television, 214
- Textbooks, 220; arithmetic, 223; evaluation of, 182; geography, 223; readability and difficulty of, 220; readers, 221; psychology, 222; science, 222; use of, 224
- Values, 175
- Work experience, 201